Agilent X-Series EMI Receiver

This manual provides documentation for the following:

MXE EMI Receiver N9038A

Getting Started and Troubleshooting Guide

Agilent Technologies

Notices

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CAUTION

A **CAUTION** notice denotes a hazard. It calls attention to an operating procedure, practice, or the like that, if not correctly performed or adhered to, could result in damage to the product or loss of important data. Do not proceed beyond a CAUTION notice until the indicated conditions are fully understood and met.

WARNING

A **WARNING** notice denotes a hazard. It calls attention to an operating procedure, practice, or the like that, if not correctly performed or adhered to, could result in personal injury or death. Do not proceed beyond a WARNING notice until the indicated conditions are fully understood and met.

Warranty

This Agilent technologies instrument product is warranted against defects in material and workmanship for a period of one year from the date of shipment. During the warranty period, Agilent Technologies will, at its option, either repair or replace products that prove to be defective.

For warranty service or repair, this product must be returned to a service facility designated by Agilent Technologies. Buyer shall prepay shipping charges to Agilent Technologies, and Agilent Technologies shall pay shipping charges to return the product to Buyer. For products returned to Agilent Technologies from another country, Buyer shall pay all shipping charges, duties, and taxes.

Compliance

This product has been designed and tested in accordance with accepted industry standards, and has been supplied in a safe condition. The documentation contains information and warnings that must be followed by the user to ensure safe operation and to maintain the product in a safe condition.

Where to Find the Latest Information

Documentation is updated periodically. For the latest information about these products, including instrument software upgrades, application information, and product information, browse to one of the following URLs:

http://www.agilent.com/find/mxe

To receive the latest updates by email, subscribe to Agilent Email Updates at the following URL:

http://www.agilent.com/find/emailupdates

Information on preventing analyzer damage can be found at:

http://www.agilent.com/find/tips

Is your product software up-to-date?

Periodically, Agilent releases software updates to fix known defects and incorporate product enhancements. To search for software updates for your product, go to the Agilent Technical Support website at

http://www.agilent.com/find/techsupport.

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1 Quick-Start

This section explains how to initialize the EMI Receiver.

The following topics can be found in this section:

"Initial Inspection" on page 10

"Instrument Location and Rack Mounting Requirements" on page 11

"Turning on the EMI Receiver the First Time" on page 12

"Anti-Virus Software and Firewalls" on page 19

"Shortening the Instrument Power-On Time" on page 20

"Instrument Information" on page 20

Initial Inspection

Inspect the shipping container and the cushioning material for signs of stress. Retain the shipping materials for future use, as you may wish to ship the instrument to another location or to Agilent Technologies for service.

Table 1-1 Verifying the contents

Item	Deliverable	Description
Getting Started Guide		Provides first-time power on instructions, licensing information, operating system information, and general hardware information.
Documentation disk		PDF files for all manuals (except service), programming example files, and some technical Application Notes.
Agilent IO Libraries disk		Software for establishing and configuring PC to instrument interfaces.
Optical mouse		An optical USB mouse to simplify screen navigation.
Keyboard		A USB keyboard to simplify data input.
Power cable		Connection for instrument power.

Shipping Problems?

If the shipping materials are damaged or the contents of the container are incomplete:

- Contact the nearest Agilent Technologies office.
- Keep the shipping materials for the carrier's inspection.
- If you must return an EMI Receiver to Agilent Technologies, use the original (or comparable) shipping materials. See "Returning an EMI Receiver for Service" on page 105.

Instrument Location and Rack Mounting Requirements

Locating the instrument

Make sure that the fan inlet and exhaust vent areas on the sides of the instrument are not obstructed. The minimal required clearance is 2 inches. Airflow restrictions cause additional airflow noise and cause the fans to speed up so they can draw in enough air for the required cooling. This results in excessive audible noise.

Cooling and rack mounting

Do not rack mount the receiver side-by-side with any other instrument with side-by-side ventilation. Make sure the exhaust air from the first instrument is directed away from the inlet of the second unit. If the pre-heated air from the first instrument is directed into the second instrument, it can cause excessive operating temperatures in the second unit and can cause instrument failures. The instrument draws air in from the left side and exhausts air from the right side.

CAUTION When installing the product in a cabinet, the convection into and out of the product must not be restricted. The ambient temperature (outside the cabinet) must be less than the maximum operating temperature of the product by 4° C for every 100 watts dissipated in the cabinet. If the total power dissipated in the cabinet is greater than 800 watts, then forced convection must be used.

Turning on the EMI Receiver the First Time

Initial power-on of the instrument can be accomplished using either of the following methods:

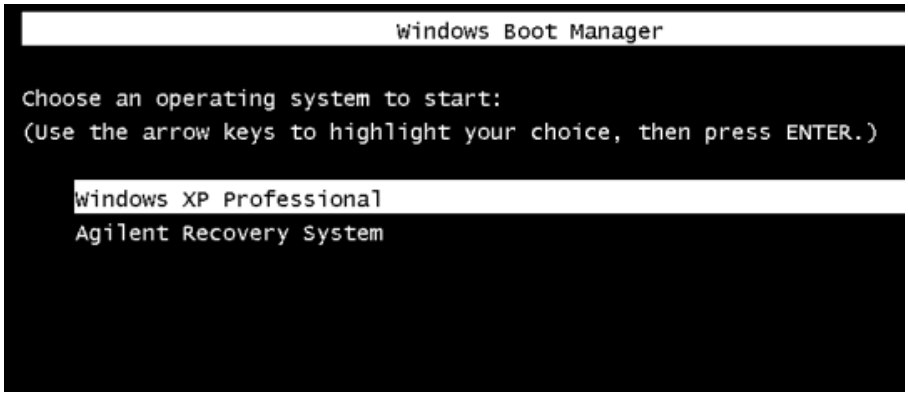
- "Initializing the instrument using a USB mouse" on page 12
- "Initializing the instrument using front-panel navigation" on page 16

NOTE During the initial power-on process, the instrument turns off and restarts several times. This **only** happens during the initial installation process.

Initializing the instrument using a USB mouse

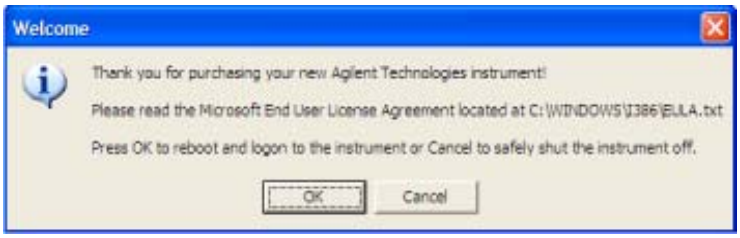
Steps	Actions	Notes
1. Connect the mouse	• Connect the mouse to one of the instrument's USB ports.	
2. Power on the instrument	a. Position the instrument so you have easy access to the power cord and plug it in.	See "Instrument Location and Rack Mounting Requirements and "Power requirements" on page 20 for more details.
	b. Press the power switch (located in the lower left corner of the instrument's front panel) to turn the instrument on.	The instrument can require more than 5 minutes to power-on. This is affected by Windows XP start-up requirements. The Agilent Technologies screen appears followed by a screen that allows you to select the operating system.

Steps	Actions	Notes
3. Launch Microsoft Setup	• Highlight Microsoft Windows XP Professional and press **Enter** to start the pre-installed operating system.	


Windows Boot Manager
Choose an operating system to start:
(Use the arrow keys to highlight your choice, then press ENTER.)
Windows XP Professional
Agilent Recovery System

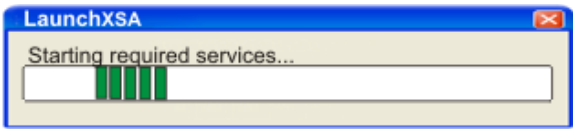
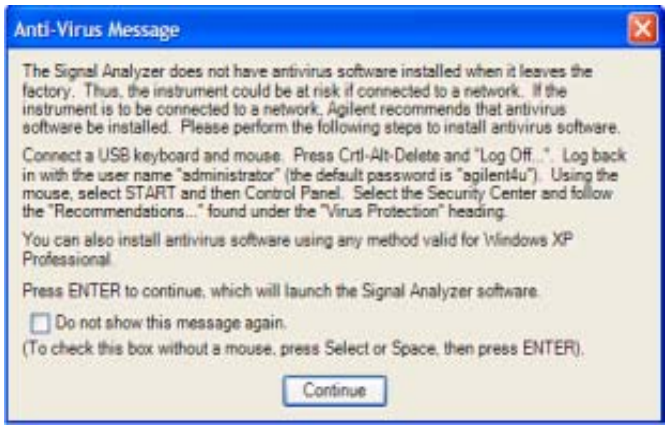
The instrument performs the following steps:

- Windows XP Startup window
- Black screen
- Windows Please wait message window
- Blue Agilent window
- The following Welcome window appears giving you information about the End-User License Agreement.

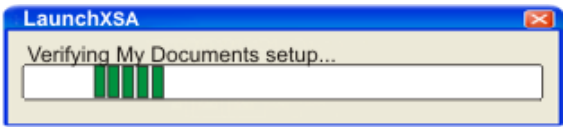

Welcome
Thank you for purchasing your new Agilent Technologies instrument!
Please read the Microsoft End User License Agreement located at C:\WINDOWS\I386\EULA.txt
Press OK to reboot and logon to the instrument or Cancel to safely shut the instrument off.
OK
Cancel

At this time, it is safe to turn off the instrument before initializing the software.

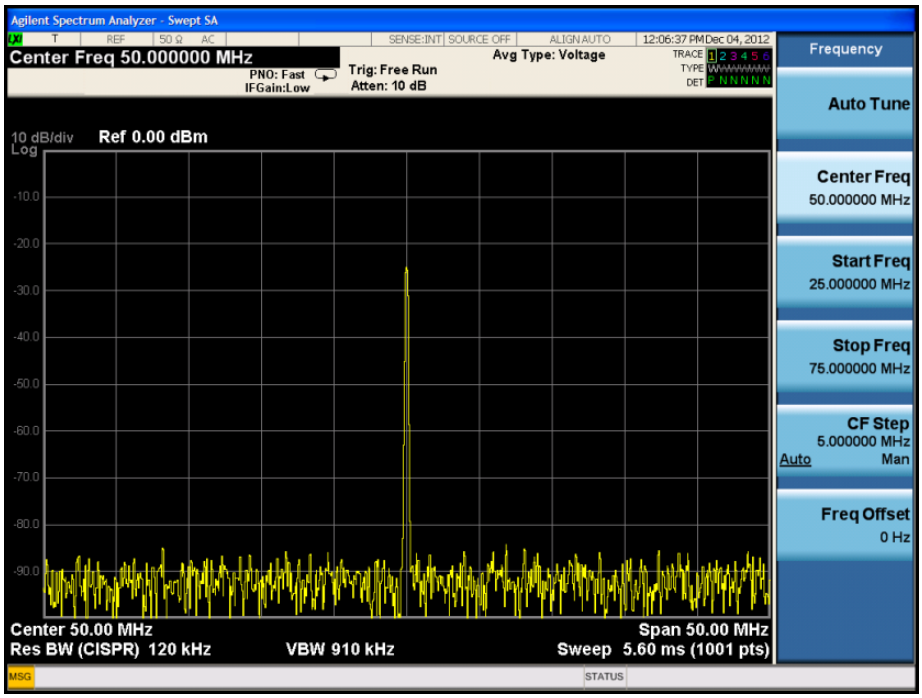
CAUTION After launching the setup, do not turn off the instrument or remove power before the Setup Wizard completes and the system restarts. Turning off the instrument may corrupt the system and the application may not operate.

Steps	Actions	Notes
4. Reboot and logon	• Click **OK**	When the instrument restarts, the following message window appears: 
		This window appears and covers the LaunchXSA window.

NOTE If you do not check the “Do not show this message again” check box, this message will be displayed each time the instrument is turned on. No application will start while this message is displayed. Before continuing, make sure that you carefully read the Anti-Virus message and determine what action is appropriate.

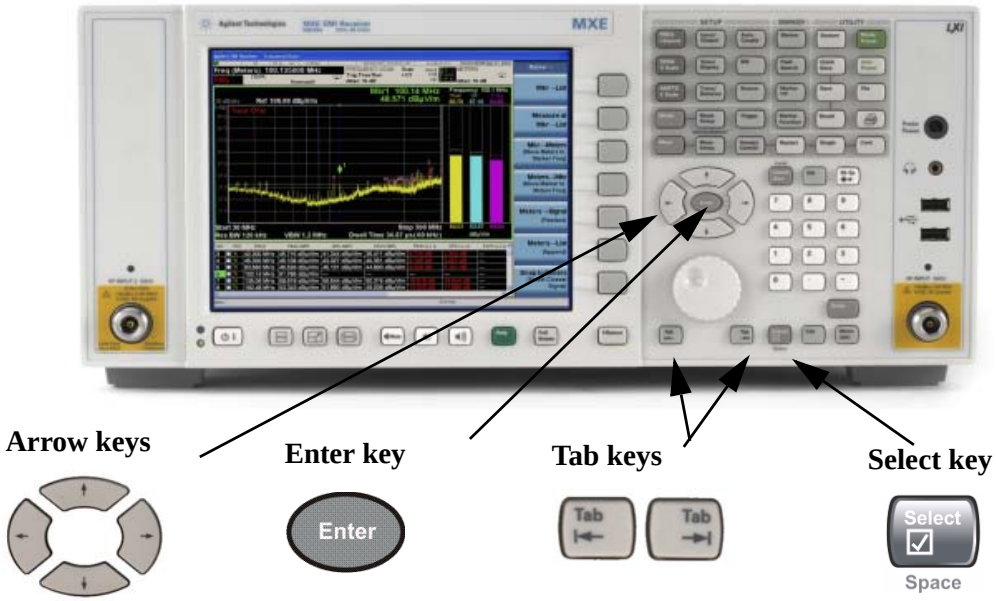
5. Disable the Anti-Virus message	• Select the check box and click **Continue**.	Messages similar to the following continue to appears:  Several required processes continue. The XSA application initializes
6. Verify the installation	a. On the instrument, press **System**, **Show**, **System**. b. Verify that the purchased application(s) appear in the list.	If you require further assistance, contact the Agilent support team. Online assistance: http://www.agilent.com/find/assist

Steps	Actions	Notes
7. View a signal	a. Press **Mode**, **Spectrum Analyzer**. b. Press **Input/Output**, **RF Calibrator**, **50 MHz**. c. Press **FREQ Channel**, **Center Freq**, **50**, **MHz**. d. Press **SPAN X Scale**, **50**, **MHz**.	This routes the internal 50 MHz signal to the instrument input.
	The 50 MHz reference signal appears on the display.	



Initializing the instrument using front-panel navigation

The following keys are used in the initialization process:



Steps	Actions	Notes
1. Power on the instrument	a. Position the instrument so you have easy access to the power cord and plug it in. b. Press the power switch (located in the lower left corner of the instrument's front panel) to turn the instrument on. c. The Agilent Technologies screen appears followed by a screen that allows you to select the operating system.	See "Instrument Location and Rack Mounting Requirements and "Power requirements" on page 20 for more details. The instrument can require more than 5 minutes to power-on. This is affected by Windows XP start-up requirements.

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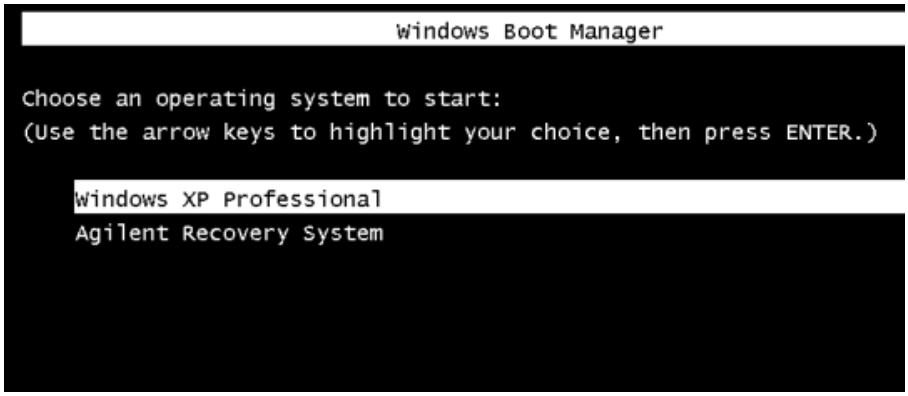
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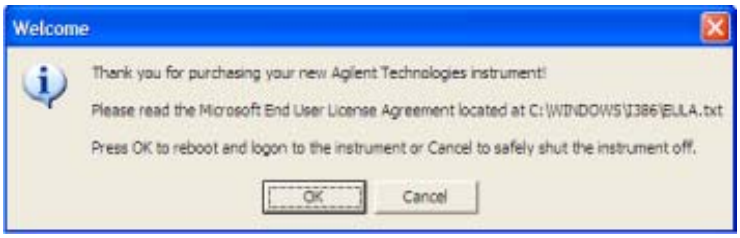
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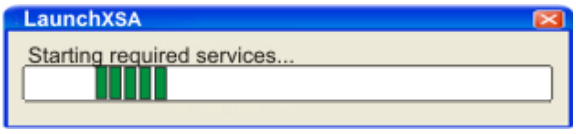
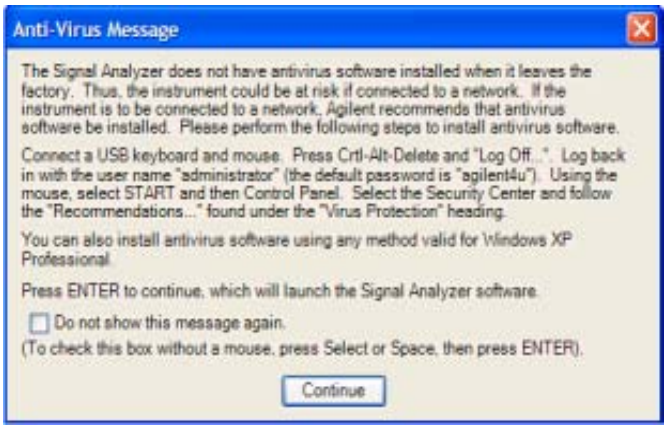
3. Reboot and logon	• Press **Enter**	When the instrument restarts, the following message window appears: 
		This window appears and covers the LaunchXSA window.

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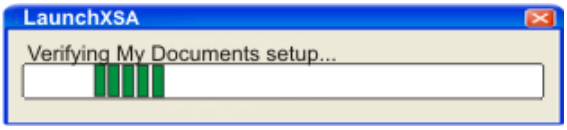
4. Disable the Anti-Virus message	• Press **Select** to select the check box and **Enter** to continue.	Messages similar to the following continue to appear:  Several required processes continue. The XSA application initializes
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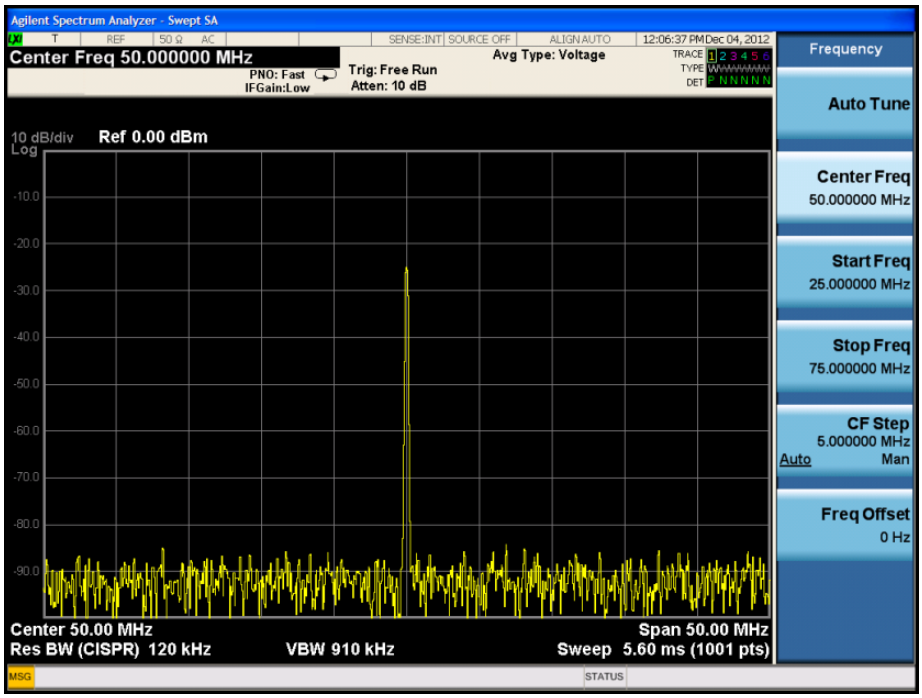
	The 50 MHz reference signal appears on the display. 	

Anti-Virus Software and Firewalls

No anti-virus software is shipped with the EMI Receiver. It is recommended that you install anti-virus software if your instrument is connected to the LAN. Check with your IT department to see what they recommend.

The EMI Receiver is shipped with the Windows XP firewall enabled. Do not modify the default network settings as this may cause problems with the operating system of the instrument.

Shortening the Instrument Power-On Time

The instrument desktop includes a shortcut to the ConfigureApplications.exe application that lets you control your instrument power-on configuration. You can set the configuration to pre-load only the applications that you typically run. This can significantly shorten the time it takes for your instrument to power-on. You can also access this functionality by pressing: **System**, **Power On**, **Configure Applications**.

If (after power-on) you want to access an application that you did not pre-load, it will take a little longer to bring it up once you press the application softkey. This longer time-frame is only for the first access after power-on. After the initial access, mode (application) switching will operate as quickly as if the application was pre-loaded.

Instrument Information

Power requirements

The only physical installation of your EMI Receiver is a connection to a power source. Line voltage does **not** need to be selected.

This instrument does **not** contain customer serviceable fuses.

WARNING **This is a Safety Class 1 Product (provided with a protective earthing ground incorporated in the power cord). The mains plug shall only be inserted in a socket outlet provided with a protective earth contact. Any interruption of the protective conductor inside or outside of the product is likely to make the product dangerous. Intentional interruption is prohibited. (IEC 348 clauses 17.3.3c & 17.3.4)**

Failure to ground the instrument properly can result in personal injury. Before turning on the instrument, you must connect its protective earth terminals to the protective conductor of the main power cable. Insert the main power cable plug into a socket outlet that has a protective earth contact only. DO NOT defeat the earth-grounding protection by using an extension cable, power cable, or autotransformer without a protective ground conductor.

CAUTION This product is designed for use in Installation Category II and Pollution Degree 2 per IEC 61010 Second Edition and IEC 664 respectively.
This instrument has autoranging line voltage input. Be sure the supply voltage is within the specified range.

The Mains wiring and connectors shall be compatible with the connector used in the premise electrical system. Failure, to ensure adequate earth grounding by not using the correct components may cause product damage, and serious injury.

AC power cord

The EMI Receiver is equipped with a three-wire power cord, in accordance with international safety standards. This cable grounds the instrument cabinet when connected to an appropriate power line outlet. The cable appropriate to the original shipping location is included with the instrument. See:

http://www.agilent.com/find/powercords

CAUTION Always use the three-prong AC power cord supplied with this product. Failure to ensure adequate earth grounding by not using this cord can cause product damage.

WARNING **If this product is not used as specified, the protection provided by the equipment could be impaired. This product must be used in a normal condition (in which all means for protection are intact) only.**
Install the instrument so that the detachable power cord is readily identifiable and easily reached by the operator. The detachable power cord is the instrument disconnecting device. It disconnects the mains circuits from the mains supply before other parts of the instrument. The front panel switch is only a standby switch and is not a LINE switch. Alternatively, an externally installed switch or circuit breaker (which is readily identifiable and is easily reached by the operator) may be used as a disconnecting device.

Protecting Against Overpowering

The input circuitry of the EMI Receiver can be damaged by applying signals that exceed the maximum safe input level of +30 dBm average total power or +/- 0.2 Vdc (when DC coupled) or +/- 70 Vdc (when AC coupled). Refer to the instrument's specification guide for more details regarding the Maximum Safe Input Level. Repairing damage to the input circuitry can be expensive.

If the EMI Receiver will be used to analyze signals that might be near the maximum safe input level, use external attenuators and/or limiters to help protect the instrument input. The External Gain, amplitude Corrections, and/or Ref Lvl Offset features may be used to compensate for the gains and losses of external devices. External Gain is under the Input/Output menu and Corrections and Ref Lvl Offset are under the AMPTD Y-Scale menu.

Note that the RF Input 2 connector can withstand high pulse signal (2 kV pulses of 10 µs duration) without damaging the circuitry.

Instrument Maintenance

Cleaning the instrument

WARNING **To prevent electrical shock, disconnect the instrument from mains before cleaning. Use a dry cloth or one slightly dampened with water to clean the external case parts. Do not attempt to clean internally.**

Cleaning Connectors

Cleaning connectors with alcohol shall only be done with the instrument power cord removed, and in a well-ventilated area. Allow all residual alcohol moisture to evaporate, and the fumes to dissipate prior to energizing the instrument.

WARNING **Keep isopropyl alcohol away from heat, sparks, and flame. Store in a tightly closed container. It is extremely flammable. In case of fire, use alcohol foam, dry chemical, or carbon dioxide; water may be ineffective.**

Use isopropyl alcohol with adequate ventilation and avoid contact with eyes, skin, and clothing. It causes skin irritation, may cause eye damage, and is harmful if swallowed or inhaled. It may be harmful if absorbed through the skin. Wash thoroughly after handling.

In case of spill, soak up with sand or earth. Flush spill area with water.

Dispose of isopropyl alcohol in accordance with all applicable federal, state, and local environmental regulations.

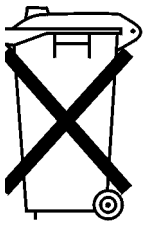
Battery Information

The EMI Receiver uses a lithium battery located on the CPU board. This is not an operator replaceable part. See “Returning an EMI Receiver for Service” on page 105. Replaceable parts must be approved or supplied by Agilent Technologies.

You can order the service documentation for the instrument through your Agilent Sales and Service office.

WARNING **Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended. Discard used batteries according to the manufacturer’s instructions.**

Do not throw batteries away but collect as small chemical waste.



DO NOT THROW BATTERIES AWAY BUT
COLLECT AS SMALL CHEMICAL WASTE.

Protecting against electrostatic discharge

Electrostatic discharge (ESD) can damage or destroy electronic components (the possibility of unseen damage caused by ESD is present whenever components are transported, stored, or used).

Test equipment and ESD

To help reduce ESD damage that can occur while using test equipment:

WARNING **Do not use these first three techniques when working on circuitry with a voltage potential greater than 500 volts.**

- Before connecting any coaxial cable to an EMI Receiver connector for the first time each day, momentarily short the center and outer conductors of the cable together.
- Personnel should be grounded with a 1 MΩ resistor-isolated wrist-strap before touching the center pin of any connector and before removing any assembly from the instrument.

- Be sure that all instruments are properly earth-grounded to prevent build-up of static charge.
- Perform work on all components or assemblies at a static-safe workstation.
- Keep static-generating materials at least one meter away from all components.
- Store or transport components in static-shielding containers.
- Always handle printed circuit board assemblies by the edges. This reduces the possibility of ESD damage to components and prevent contamination of exposed plating.

Additional information about ESD

For more information about ESD and how to prevent ESD damage, contact the Electrostatic Discharge Association (http://www.esda.org). The ESD standards developed by this agency are sanctioned by the American National Standards Institute (ANSI).

2 Front and Rear Panel Features

This section describes the following features:

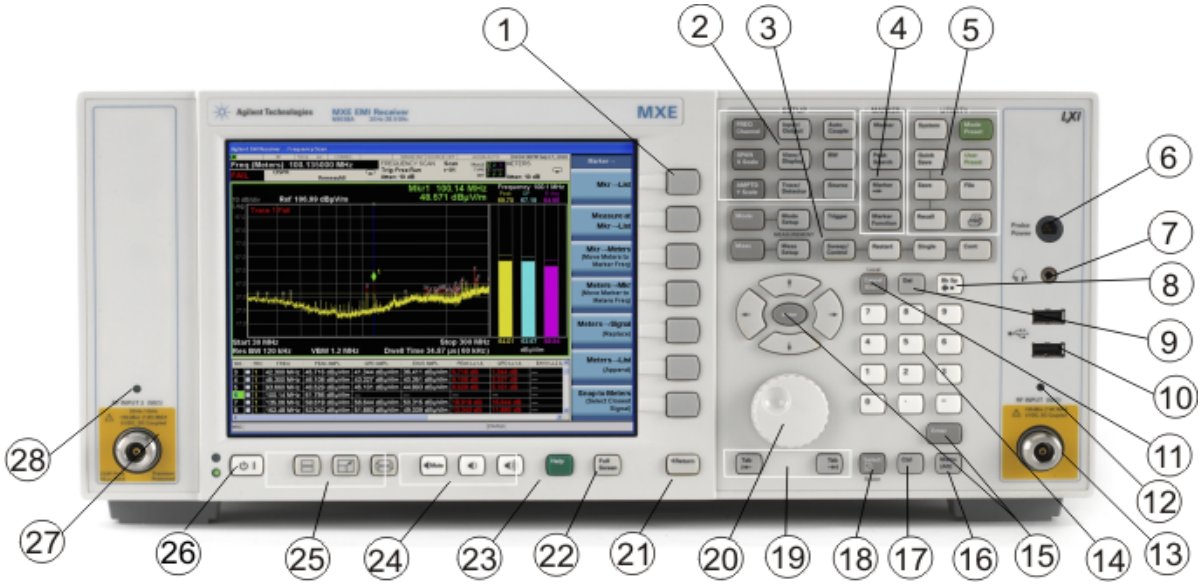
"Front-Panel Features" on page 26

"Display Annotations" on page 33

"Rear-Panel Features" on page 35

"Front and Rear Panel Symbols" on page 37

Front-Panel Features



Item		Description
#	Name	
1	Menu Keys	Key labels appear to the left of the menu keys to identify the current function of each key. The displayed functions are dependent on the currently selected Mode and Measurement, and are directly related to the most recent key press.
2	Instrument Setup Keys	These keys set the parameters used for making measurements in the current Mode and Measurement.
3	Measurement Keys	These keys select the Mode and the Measurement within the mode. They also control the initiation and rate of recurrence of measurements.
4	Marker Keys	Markers are often available for a measurement in order to measure a very specific point/segment of data within the range of the current measurement data.
5	Utility Keys	These keys control system-wide functionality such as: • instrument configuration information and I/O setup, • printer setup and printing, • file management, save and recall, • instrument presets.
6	Probe Power	Supplies power for external high frequency probes and accessories.
7	Headphones Output	Headphones can be used to hear any available audio output.

Item		Description
#	Name	
8	Back Space Key	Press this key to delete the previous character when entering alphanumeric information. It also works as the Back key in Help and Explorer windows.
9	Delete Key	Press this key to delete files or to perform other deletion tasks.
10	USB Connectors	Standard USB 2.0 ports, Type A. Connect to external peripherals such as a mouse, keyboard, DVD drive, or hard drive.
11	Local/Cancel/(Esc) Key	If you are in remote operation, Local: • returns instrument control from remote back to local (the front panel). • turns the display on (if it was turned off for remote operation). • can be used to clear errors. (Press the key once to return to local control, and a second time to clear error message line.) If you have not already pressed the units or Enter key, Cancel exits the currently selected function without changing its value. Esc works the same as it does on a PC keyboard. It: • exits Windows dialogs • clears errors • aborts printing • cancels operations.
12	LED Indicator	A green light indicates RF Input is the active input port.
13	RF Input	Connector for inputting an external signal. Make sure that the total power of all signals at the instrument input does **not** exceed +30 dBm (1 watt).
14	Numeric Keypad	Enters a specific numeric value for the current function. Entries appear on the upper left of the display, in the measurement information area.
15	Enter and Arrow Keys	The Enter key terminates data entry when either no unit of measure is needed, or you want to use the default unit. The arrow keys: • Increment and decrement the value of the current measurement selection. • Navigate help topics. • Navigate or make selections within Windows dialogs. • Navigate within forms used for setting up measurements. • Navigate within tables. **NOTE** The arrow keys cannot be used to move a mouse pointer around on the display.
16	Menu/ (Alt) Key	Alt works the same as a PC keyboard. Use it to change control focus in Windows pull-down menus.

Item		Description
#	Name	
17	Ctrl Key	Ctrl works the same as a PC keyboard. Use it to navigate in Windows applications or to select multiple items in lists.
18	Select / Space Key	Select is also the Space key and it has typical PC functionality. For example, in Windows dialogs, it selects files, checks and unchecks check boxes, and picks radio button choices. It opens a highlighted Help topic.
19	Tab Keys	Use these keys to move between fields in Windows dialogs.
20	Knob	Increments and decrements the value of the current active function.
21	Return Key	Exits the current menu and returns to the previous menu. Has typical PC functionality.
22	Full Screen Key	Pressing this key turns off the softkeys to maximize the graticule display area. Press the key again to restore the normal display.
23	Help Key	Initiates a context-sensitive Help display for the current Mode. Once Help is accessed, pressing a front panel key brings up the help topic for that key function.
24	Speaker Control Keys	Enables you to increase or decrease the speaker volume, or mute it.
25	Window Control Keys	These keys select between single or multiple window displays. They zoom the current window to fill the data display, or change the currently selected window. They can be used to switch between the Help window navigation pane and the topic pane.
26	Power Standby/ On	Turns the EMI Receiver on. A green light indicates power on. A yellow light indicates standby mode. **NOTE** The front-panel switch is a standby switch, **not** a LINE switch (disconnecting device). The instrument continues to draw power even when the line switch is in standby. The main power cord can be used as the system disconnecting device. It disconnects the mains circuits from the mains supply.
27	RF Input 2	Connector for inputting an external signal. Make sure that the total power of all signals at the instrument input does **not** exceed +30 dBm (1 watt). This input can withstand 2 kV pulses of 10 µs duration.
28	LED Indicator	A green light indicates RF Input 2 is the active input port.

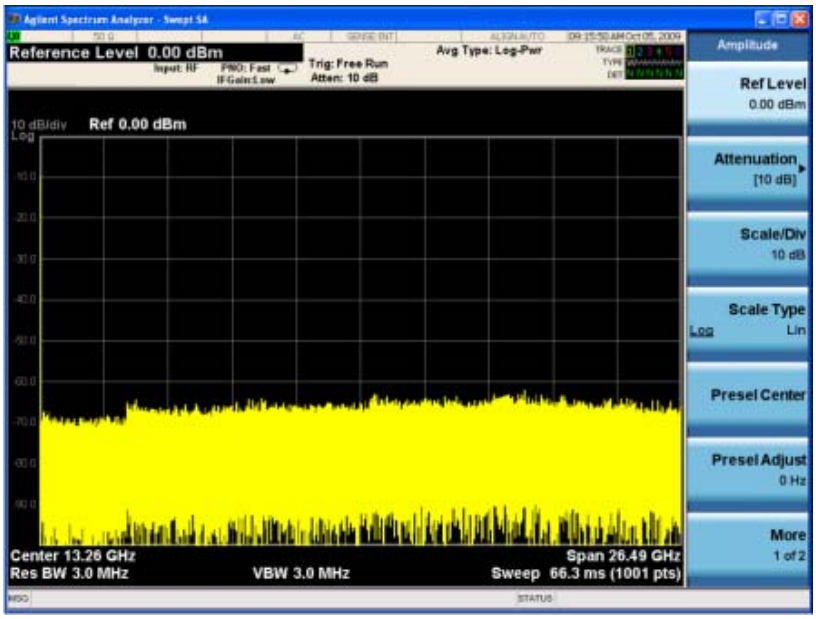
Overview of key types

The keys labeled **FREQ Channel**, **System**, and **Marker Functions** are all examples of front-panel keys.

Most of the dark or light gray keys access menus of functions that are displayed along the right side of the display. These displayed key labels are next to a column of keys called menu keys.

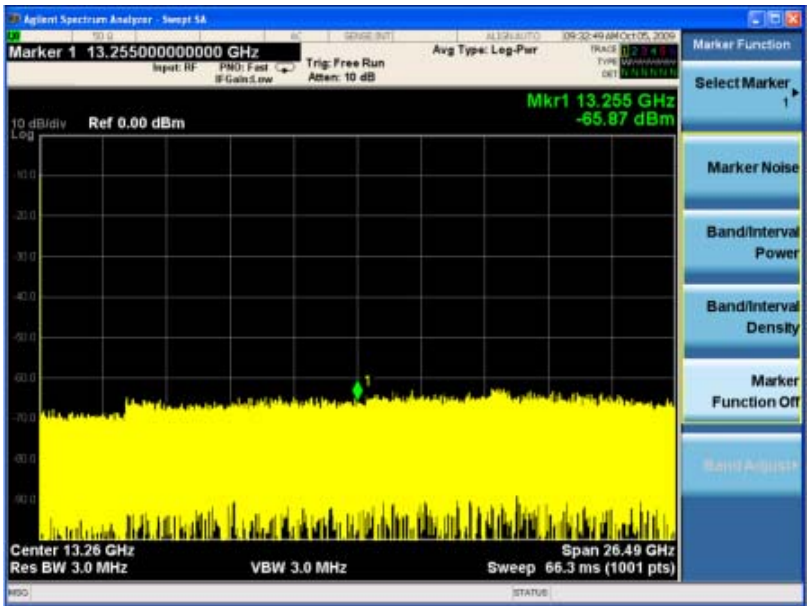
Menu keys list functions based on which front-panel key was pressed last. These functions are also dependant on the current selection of measurement application (**Mode**) and measurement (**Meas**).

If the numeric value of a menu key function can be changed, it is called an active function. The function label of the active function is highlighted after that key has been selected. For example, press **AMPTD Y Scale**. This calls up the menu of related amplitude functions. The function labeled **Ref Level** (the default selected key in the Amplitude menu) is highlighted. **Ref Level** also appears in the upper left of the display in the measurement information area. The displayed value indicates that the function is selected and its value can now be changed using any of the data entry controls.



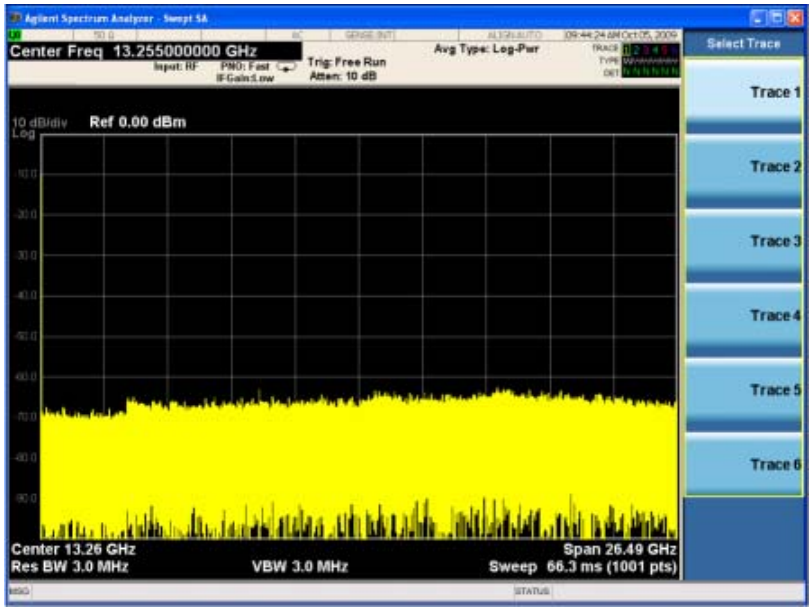
Some menu keys have multiple choices on their label, such as **On**/**Off**, **Auto**/**Man**, or **Log/Lin** (as shown above). The different choices are selected by pressing the key multiple times. For example, the Auto/Man type of key. To select the function, press the menu key and notice that Auto is underlined and the key becomes highlighted. To change the function to manual, press the key again so that Man is underlined. If there are more than two settings on the key, keep pressing it until the desired selection is underlined.

When a menu first appears, one key label is highlighted to show which key is the default selection. If you press **Marker Function**, the **Marker Function Off** key is the menu default key, and is highlighted.

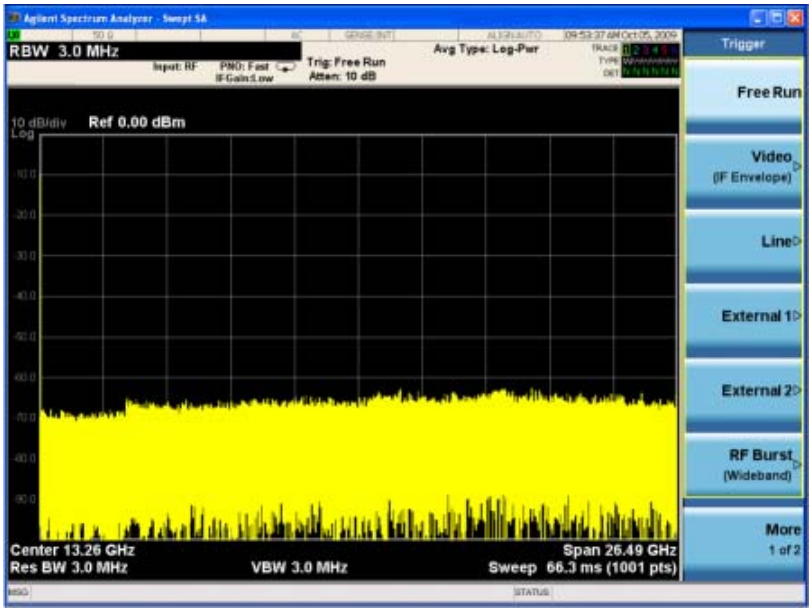


Some of the menu keys are grouped together by a yellow bar running behind the keys near the left side or by a yellow border around the group of keys. When you press a key within the yellow region, such as **Marker Noise**, the highlight moves to that key to show it has been selected. The keys that are linked are related functions, and only one of them can be selected at any one time. For example, a marker can only have one marker function active on it. So if you select a different function it turns off the previous selection. If the current menu is two pages long, the yellow bar or border could include keys on the second page of keys.

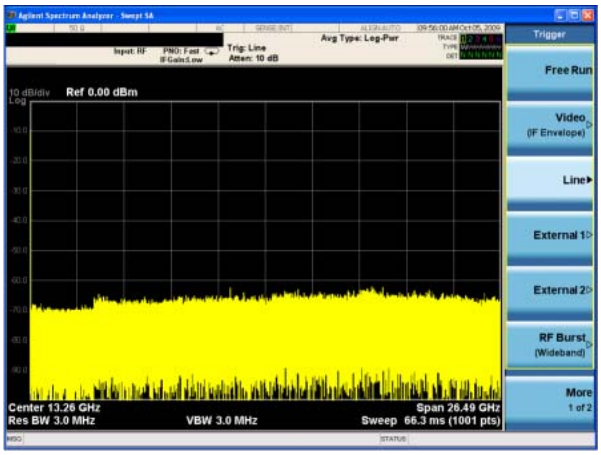
In some key menus, a key label is highlighted to show which key has been selected from multiple available choices, and the menu is immediately exited when you press one of the other keys. For example, when you press the **Select Trace** key (in the **Trace/Detector** menu), it brings up its own menu of keys. The **Trace 1** key is highlighted. When you press the **Trace 2** key, the highlight moves to that key and the screen returns to the **Trace/Detector** menu.

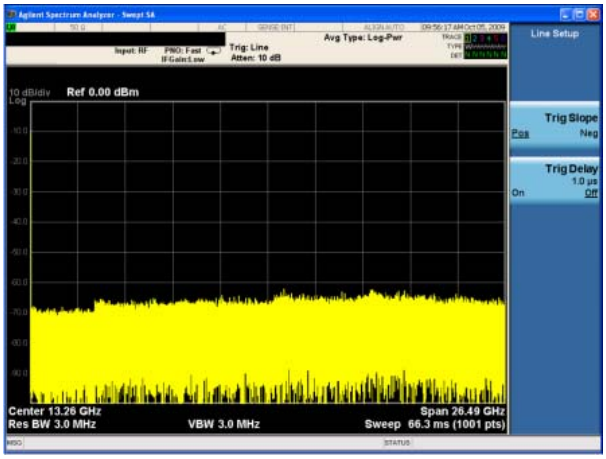


If a displayed key label shows a small solid-black arrow tip pointing to the right, it indicates that additional key menus are available. If the arrow tip is not filled in solid then pressing the key the first time selects that function. Now the arrow is solid and pressing it again brings up an additional menu of settings.



Front-Panel Features





Display Annotations

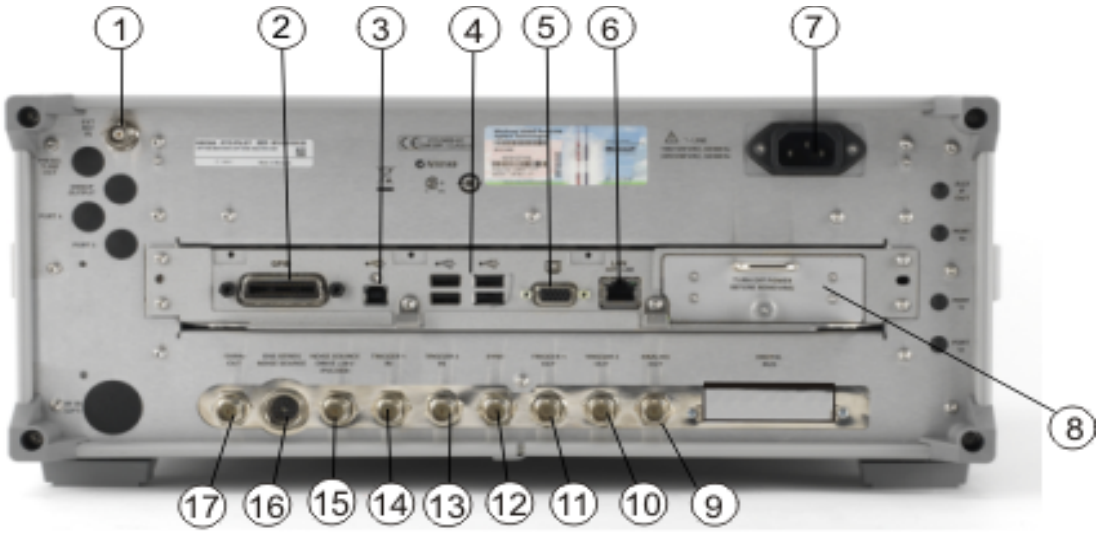
This section describes the display annotation as it is on the EMI Receiver display. Other measurement application modes have some annotation differences.

Item	Description	Function Keys
1	Measurement bar - Shows general measurement settings and information. Indicates single/continuous measurement. Some measurements include limits that the data is tested against. A Pass/Fail indication may be shown in the lower left of the measurement bar.	All the keys in the Setup part of the front panel.
2	Active Function (measurement bar) - when the current active function has a settable numeric value, it is shown here.	Currently selected front panel key.
3	Banner - shows the name of the selected application that is currently running.	**Mode**
4	Measurement title - shows title information for the current measurement, or a title that you created for the measurement.	**Meas** **View/Display**, **Display**, **Title**

Item	Description	Function Keys
5	Settings panel - displays system information that is not specific to any one application. • Input/Output status - green LXI indicates the LAN is connected. RLTS indicate Remote, Listen, Talk, SRQ • Input impedance and coupling • Amplitude Correction Status • Frequency reference selection • Setting of automatic internal alignment routine	**Local** and **System, I/O Config** **Input/Output**, **Amplitude**, **System** and others.
6	Active marker frequency, amplitude or function value	**Marker**
7	Settings panel - time and date display.	**System**, **Control Panel**
8	Key labels that change based on the most recent key press.	Softkeys
9	Displays information, warning and error messages. Message area - single events, Status area - conditions.	**System**, **Show**, **Errors**
10	Signal list	
11	Measurement settings for the data currently being displayed in the graticule area. In the example above: center frequency, resolution bandwidth, video bandwidth, frequency span, dwell time and units of sweep points.	Keys in the Setup part of the front panel.

Rear-Panel Features

EMI Receiver



Item		Description
#	Name	
1	EXT REF IN	Input for an external frequency reference signal: 1 to 50 MHz
2	GPIB	A General Purpose Interface Bus (GPIB, IEEE 488.1) connection that can be used for remote instrument operation.
3	USB Connector	USB 2.0 port, Type B. USB TMC (test and measurement class) connects to an external pc controller to control the instrument and for data transfers over a 480 Mbps link.
4	USB Connectors	Standard USB 2.0 ports, Type A. Connect to external peripherals such as a mouse, keyboard, printer, DVD drive, or hard drive.
5	MONITOR	Allows connection of an external VGA monitor.
6	LAN	A TCP/IP Interface that is used for remote instrument operation.
7	Line power input	The AC power connection. See the product specifications for more details.
8	Removable Disk Drive	Standard
9	Analog Out	Demod Audio For Option YAS: Screen Video

Item		Description
#	Name	
10	TRIGGER 2 OUT	A trigger output used to synchronize other test equipment with the instrument. Configurable from the Input/Output keys.
11	TRIGGER 1 OUT	A trigger output used to synchronize other test equipment with the instrument. Configurable from the Input/Output keys.
12	Sync	Reserved for future use.
13	TRIGGER 2 IN	Allows external triggering of measurements.
14	TRIGGER 1 IN	Allows external triggering of measurements.
15	Noise Source Drive +28 V (Pulsed)	For use with Agilent 346A, 346B, and 346C Noise Sources.
16	SNS Series Noise Source	For use with Agilent N4000A, N4001A, N4002A Smart Noise Sources (SNS).
17	10 MHz OUT	An output of the instrument internal 10 MHz frequency reference signal. It is used to lock the frequency reference of other test equipment to the instrument.

Front and Rear Panel Symbols

This symbol is used to indicate power ON (green LED).

This symbol is used to indicate power STANDBY mode (yellow LED).

This symbol indicates the input power required is AC.

The instruction documentation symbol. The product is marked with this symbol when it is necessary for the user to refer to instructions in the documentation.

The CE mark is a registered trademark of the European Community.

The C-Tick mark is a registered trademark of the Australian Spectrum Management Agency.

This is a marking of a product in compliance with the Canadian Interference-Causing Equipment Standard (ICES-001).

This is also a symbol of an Industrial Scientific and Medical Group 1 Class A product (CISPR 11, Clause 4).

The CSA mark is a registered trademark of the Canadian Standards Association International.

This symbol indicates separate collection for electrical and electronic equipment mandated under EU law as of August 13, 2005. All electric and electronic equipment are required to be separated from normal waste for disposal (Reference WEEE Directive 2002/96/EC).

Indicates the time period during which no hazardous or toxic substance elements are expected to leak or deteriorate during normal use. Forty years is the expected useful life of the product.

This symbol on all primary and secondary packaging indicates compliance to China standard GB 18455-2001.

South Korean Class A EMC Declaration
A 급 기기 (업무용 방송통신기자재)
이 기기는 업무용 (A 급) 전자파적합기기로서 판 매자 또는 사용자는 이 점을 주 의하시기 바라 며 , 가정외의 지역에서 사용하는 것을 목적으 로 합니다 .

This equipment is Class A suitable for professional use and is for use in electromagnetic environments outside of the home.

To return unwanted products, contact your local Agilent office, or see http://www.agilent.com/environment/product/ for more information.

Front and Rear Panel Symbols

3 Using the EMC32 Software

The MXE is designed to be compatible with EMC32 software. The following section contains the details for configuring the instrument and software.

How to Set Up and Run the EMC32 Software

To be compatible with the EMC32 software, the MXE EMI Receiver must behave like the R&S ESU. The following procedure details the steps necessary to correctly configure the instrument to emulate the ESU.

Configuring the MXE

Step	Action	Notes
1. MXE connection	• Connect the GPIB cable between the PC and the MXE	
2. Set the MXE GPIB address	a. Press **System**, I/**O Config**, **GPIB** b. Press **GPIB Address**, **20**, **Enter**	This is what ESU defaults to
3. Set the EMI Receiver Mode	• Press **Mode**, **EMI Receiver**	The EMI Receiver Mode has the ability to identify as an ESU, which is required by the EMC32 software. Most other modes in the MXE do not have this ability.
NOTE	The EMC32 software does an ID query when it starts up a test, so the MXE should always be set to the EMI Receiver Mode before setting up the EMC32 software.	
4. Set the EMI Receiver Mode to ID as an ESU	a. Press **Mode Setup**, **Mode IDN Response** b. Press **R&S ESU**	
5. Set the MXE to preset to the EMC Standard	**For a CISPR test:** a. Press **Mode Setup**, **EMC Std**, **CISPR** b. Press **Mode Setup**, **EMC Std**, **Preset To**, and ensure that it is set to **CISPR** **Or** **For a MIL test:** a. Press **Mode Setup**, **EMC Std**, **MIL** b. Press **Mode Setup**, **EMC Std**, **Preset To**, **MIL**	The MXE uses the EMC Standard to choose which RBW's to make available, and how to couple them. Note that CISPR is the default at instrument startup, but if you have set MIL to be the preset and you press the Mode Preset key, the instrument will preset to MIL.

4 Instrument Operating System

This chapter describes the Microsoft Windows XP configuration and the settings used with the Agilent instrument software. It includes information about changing some of the system settings. And it describes the Windows operating system configuration and the software installations that are present on the Hard Disk Drive when the instrument leaves the factory.

The front panel of the EMI Receiver has been designed with the keys needed to navigate windows for: accessing menus, traversing in dialogs, selecting items, and depressing displayed buttons. It is possible to use the front panel for changing Windows XP configuration items, but it is much easier to perform these tasks with a USB mouse and external keyboard. For specifics on navigating using the front panel, see “Navigating Windows Without a Mouse” on page 66.

The following topics can be found in this chapter:

“Agilent Software Installed” on page 42

“Customer Installation of Software” on page 42

“User Accounts” on page 43

“Agilent X-Series EMI Receiver Licensing” on page 44

“Licensing New Measurement Application Software - After Initial Purchase” on page 45

“Windows Configuration” on page 47

“Configuring Printers” on page 50

“Configuring LAN” on page 50

“Windows Security” on page 51

“System Maintenance” on page 55

“USB Connections” on page 56

“Disk Drive Partitioning and Use” on page 57

“Disk Drive Recovery Process” on page 59

Agilent Software Installed

Agilent signal analyzer software

The N9060B Agilent Spectrum Analyzer Measurement Application software is installed in the instrument. Additional measurement applications are available. Each application requires a license to execute the software. All of these applications are installed by the factory at the time of manufacture, even if the licenses have not been purchased. You may purchase additional licenses at a later date.

Customer Installation of Software

3rd party software verified by Agilent

Agilent has verified that the following programs are compatible with the instrument applications:

- Symantec Endpoint Protection
- Microsoft Security Essentials
- MathWorks MATLAB

Installation of other 3rd party software

The X-Series EMI Receiver platform is an open Windows environment, so you can install non-approved software on the instrument. However, installation of non-approved software may affect instrument performance. Agilent does not warrant the performance of the instruments with non-approved software installed.

NOTE

Before installing any additional programs on the instrument, you should exit the current application.

Also, you must not remove any applications or programs that are installed on the instrument when it is shipped from the factory.

If you install programs other than those that Agilent has tested, it could cause problems with the instrument's applications. If this happens, you should try uninstalling the program that has caused the problem, or try changing the program's configuration. If this does not correct the problem, you may have to use the Agilent Recovery system to reinstall the instrument's system software.

User Accounts

User login

The default user account that ships from the factory is “Instrument” with the password “measure4u”. This user is a member of the Power Users group. Using the Instrument account you can perform the following operations:

- Install software
- Configure network and printer access
- Access files on the instrument that are accessible to the Power Users group
- Run applications that are accessible to the Power Users group

Administrator login

The “Administrator” account ships from the factory with the password “agilent4u”. Using the Administrator account you can perform the following operations:

- Install software
- Configure network and printer access
- Access all files on the instrument
- Add or change user accounts and passwords
- Change Windows settings
- Run any application

AgilentOnly user account

The instrument contains a user account called “AgilentOnly” that can be used by Agilent’s customer support in the event that the Administrator password was changed and has since been lost or forgotten. You must not remove or modify the AgilentOnly account.

Agilent service user accounts

User accounts are defined for Agilent’s use if it is necessary to service the instrument.

Customer creation of accounts

You can create additional user accounts and decide on the level of security granted to any new user accounts created. For example, the level of security can be assigned as administrator, power user, user, backup operators. User names are not case sensitive but passwords are case sensitive.

NOTE For the EMI Receiver software to operate, the user account executing the software must be assigned Administrator or Power User privileges. Otherwise, the EMI Receiver software will not operate correctly.

It is Agilent's expectation that each user's My Documents folder is mapped to the D: drive. This is to avoid overwriting the user's data in the event the Agilent Recovery must be performed. Also, this facilitates convenient backup by copying the contents of the D: drive to external media. All users accounts created by the factory already have My Documents mapped to the D: drive. Please map all new users My Documents folders to the D: drive.

Agilent X-Series EMI Receiver Licensing

Fixed Perpetual

Fixed Perpetual licenses are the traditional license type (Fixed) with the same duration (Perpetual) that have been available for all features since the X-Series introductions. Fixed Perpetual licenses are identified by the "F" in the second character and "P" in the third character of the option designator:

Example: N9068A-2FP or W9068A-2FP

A license key is instrument model and serial number dependent. You can only install the license key on the specific instrument for which it was created.

Trial licenses

Trial licenses are available so that you may try applications before you buy the full applications. These licenses are time limited for a 14 day period, and are restricted to one trial for an individual application per instrument. The restriction is enforced through the license redemption process of the Agilent Software Licensing (ASL) system.

Trial licenses are not installed in the factory and no entitlement certificates are created for distribution with new instrument shipments. Trial licenses are not available for order, but are available from the Agilent Web site after completing a brief registration:

http://www.agilent.com/find/xseries_trial

Trial Licenses are identified by the license designator "-TRL".

Example: N9071A-TRL

If a product has multiple tiers (levels of functionality), the –TRL license enables all tiers for the duration of the license. If you have a base tier and want a trial license for a higher tier, you can install the –TRL license. When the duration expires the entitlement is reverted back to the base tier.

Licensing New Measurement Application Software - After Initial Purchase

Additional measurement application software can be ordered after your initial purchase of the EMI Receiver. Software upgrades are provided in a kit that includes an option based Entitlement Certificate and a license agreement. The licenses are downloaded from the license Web site onto a USB storage device so they can be loaded into the instrument.

For all software upgrades, we recommend that the latest version of the instrument software be installed. This ensures that the measurement application being licensed and activated is installed and is the most current version.

The latest revision of the software may be downloaded from: http://www.agilent.com/find/mxe_software.

A license key is for one instrument model and serial number combination. The license key will only install itself on that instrument.

NOTE No calibration is required after a measurement application installation.

Installation procedure over USB

Step	Action	Notes
1. Redeem the Option Upgrade Entitlement Certificate	• Follow the instructions on the Certificate	After redeeming your Option Upgrade Entitlement Certificate you will receive an e-mail with an attached License File.
2. Save the license file	• Save the.lic file to the root directory of a USB storage device	

Step	Action	Notes
3. Load the license file	• Connect the USB storage device to one of the EMI Receiver USB ports.	Windows will detect the new hardware and may display the configuration menu. The instrument will automatically load the license file. (This may take a few minutes) Upon completion, the Agilent License Manager will display a “Successful License Installation” message.
NOTE	Alternatively the license file can be manually installed over USB or LAN by placing the license file in the following folder on the EMI Receiver. C:\Program Files\Agilent\licensing	
4. Verify installation	a. Cycle the power on the instrument. b. Press **System**, **Show**, **System**. c. Verify that the new application appears in the list.	The application will not be available for use until after the power has been cycled. This displays the list of installed applications. If you require further assistance, please contact the Agilent support team. Online assistance: http://www.agilent.com/find/assist If you do not have access to the Internet, contact your local Agilent Technologies Sales and Service Office, or if in the United States, call 1-800-829-4444.

Windows Configuration

The Windows settings have been optimized for the best measurement performance. Any modifications to these settings may degrade instrument performance and measurement speed. In general, most Windows System settings (typically set through the Windows Control Panel) should not be modified. Those that can be safely modified are listed below.

CAUTION To recover from problems caused by changing Windows systems settings, you may have to reinstall the Windows system and instrument application using the Agilent Recovery process.

Settings that can be changed

You may change the following Windows settings or administrative tasks (available from the Windows Control Panel) to select your personal preferences.

NOTE Before changing any Windows System settings, exit the instrument application.

You may use this feature	To do this...
	Configure Microsoft Automatic Updates.
	Install and configure an Anti Virus program.
	Setup new Instrument user accounts. **CAUTION** Do not delete or modify the “Agilent-Only” user account.
	Add the Instrument to a network.

You may use this feature	To do this...
	Install and configure a printer.
	Set the time and date.
	Modify System Properties, Advanced Tab settings of Performance, **Adjust for Best Performance**. Leave all other settings unchanged.

Settings that must not be changed

Avoid changing any settings in this section. Changes to the following settings may degrade instrument performance, screen displays, and measurement speed.

Do NOT use this feature	To do this...
	Do not change Power Options. (Power Scheme, Power Button, Hibernate)
	Do not modify System Properties, Hardware Tab settings (Device Manager, Drivers). Do not modify System Properties, Advanced Tab settings (Performance (except Adjust for Best Performance), User Profiles, Startup and Recovery, Environment Variables, Error Reporting)
	Do not remove installed Fonts.
	Do not change the following Display Settings: • Screen Saver settings • The screen resolution, 1024 x 768 • DPI setting from Normal size (96 DPI)

Do NOT use this feature	To do this...
Regional and Language ...	Do not change the Regional Options tab settings (Standards and formats, or Location). Do not change the Language tab settings (Text services and input languages).
User Accounts	Do not delete or modify the “AgilentOnly” user account.

In addition, **DO NOT**:

- Add, delete, or modify disk drive partitions.
- Delete or modify Agilent registry entries.
- Change the contents of any directories containing the name “Agilent”
- Stop these services:
  - The MSSQL$CDF service or uninstall the “Microsoft SQL Server Desktop Engine”
  - The IIS server or tamper with any virtual directories (or their contents) that came configured with the instrument.
- Uninstall these libraries, interfaces, or programs:
  - The Agilent I/O Libraries
  - The .NET Framework or any Hotfixes or Service Packs for the .NET Framework
  - The “Microsoft Visual J# .NET Redistributable Package 1.1"
  - Programs that begin with “Agilent”
  - The Adobe Acrobat Reader
- Modify
  - The Agilent I/O Library “GPIB27”, “GPIB28” interfaces shown as configured Instrument I/O in the Agilent Connection Expert or I/O Config.

Configuring Printers

Printers are configured using the Microsoft Windows Control Panel. It is easily accessed from the Windows Start menu or from under the front panel **System** key. This setup process is most easily done using a USB mouse and an external keyboard. If you do not have a mouse it can be done using front-panel keys. See “Navigating Windows Without a Mouse” on page 66.

When setting up a new printer, you may need to load the printer driver (unless you are using a network printer that your IT department has set up to include the driver). The manufacturer of the printer supplies the driver software and process. That may require that you attach an external USB disk drive. An alternative is to connect the instrument to the LAN and download the driver from the printer manufacturer’s internet site.

Configuring LAN

Hostname

The Computer Name, or hostname, is pre-configured from the factory. It must be a unique name so that it does not conflict with other equipment on your LAN. The pre-configured Computer Name is A-N9038A-xxxxx, where xxxxx is the last 5 digits of the instrument’s serial number.

To change the Computer Name consult the Microsoft Windows XP Help and Support Center.

IP Address & Gateway

The instrument is pre-configured to obtain an IP Address using DHCP. The IP Address and Gateway can be changed. Consult the Microsoft Windows XP Help and Support Center to configure the LAN.

Windows Security

Microsoft recommends the following to ensure the instrument's Windows XP operating system is protected:

- Use an internet firewall.
- Get the latest critical Windows updates.
- Use up-to-date antivirus software.

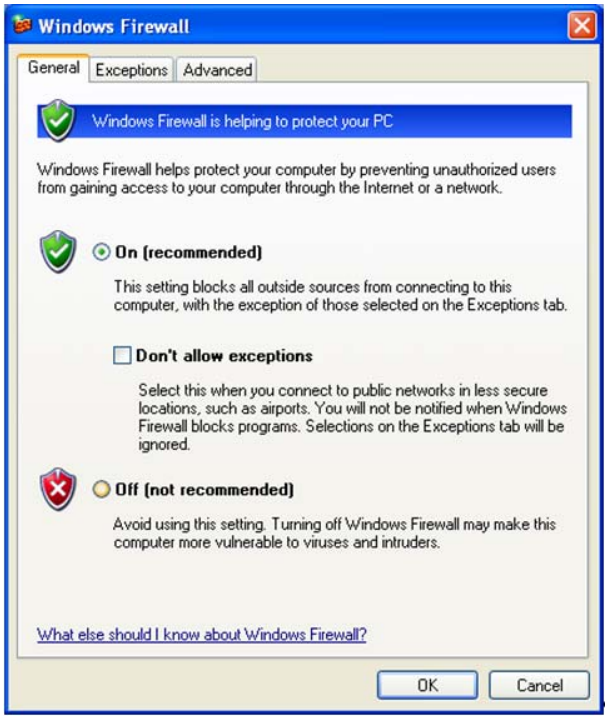
To check the status or make changes in the security settings for your instrument, open the Windows Security Center, click **Start**, **Control Panel**, and then click **Security Center**.

Windows Security Center
Security Center
Help protect your PC
Resources
Get the latest security and virus information from Microsoft
Check for the latest updates from Windows Update
Get support for security-related issues
Get help about Security Center
Change the way Security Center alerts me
Security essentials
Security Center helps you manage your Windows security settings. To help protect your computer, make sure the three security essentials are marked ON. If the settings are not ON, follow the recommendations. To return to the Security Center later, open Control Panel.
What's new in Windows to help protect my computer?
Firewall
ON
Automatic Updates
CHECK SETTINGS
Automatic Updates is set up to download and install updates only after checking with you. Click Turn on Automatic Updates to have Windows automatically keep your computer current with important updates (recommended). How does Automatic Updates help protect my computer?
Turn on Automatic Updates
Virus Protection
CHECK STATUS
Symantec AntiVirus reports that it is installed, but its status is unknown. Click Recommendations for suggested actions you can take. How does antivirus software help protect my computer?
Recommendations...
Manage security settings for:
Internet Options
Automatic Updates
Windows Firewall
At Microsoft, we care about your privacy. Please read our privacy statement.

NOTE The window may look slightly different on your instrument.

Windows Firewall

The instrument is shipped with the Windows Firewall enabled.


Windows Firewall
General
Exceptions
Advanced
Windows Firewall is helping to protect your PC
Windows Firewall helps protect your computer by preventing unauthorized users from gaining access to your computer through the Internet or a network.
On (recommended)
This setting blocks all outside sources from connecting to this computer, with the exception of those selected on the Exceptions tab.
Don't allow exceptions
Select this when you connect to public networks in less secure locations, such as airports. You will not be notified when Windows Firewall blocks programs. Selections on the Exceptions tab will be ignored.
Off (not recommended)
Avoid using this setting. Turning off Windows Firewall may make this computer more vulnerable to viruses and intruders.
What else should I know about Windows Firewall?
OK
Cancel

NOTE The window may look slightly different on your instrument.

Windows Firewall **Exceptions** for programs and ports have been added to allow proper operation of the instrument over a network. Modifying these settings may cause the instrument to not operate properly.

Automatic updates

If the instrument has internet access, the instrument default is set to automatically check for critical Windows Updates and notify you.

You can change the configuration of the Microsoft Automatic Updates to choose not to have automatic updates. Then you can manually update Windows by accessing Internet Explorer and selecting Windows Update from the Tools menu.

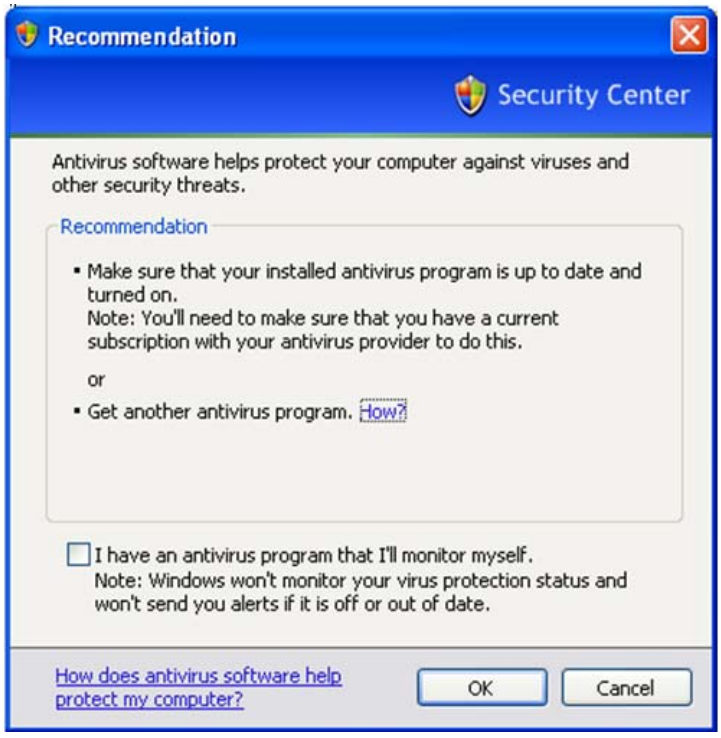
Automatic Updates
Automatic Updates
Help protect your PC
Windows can regularly check for important updates and install them for you. (Turning on Automatic Updates may automatically update Windows Update software first, before any other updates.)
How does Automatic Updates work?
Automatic (recommended)
Automatically download recommended updates for my computer and install them:
Every day
at
3:00 AM
Download updates for me, but let me choose when to install them.
Notify me but don't automatically download or install them.
Turn off Automatic Updates.
Your computer will be more vulnerable unless you install updates regularly.
Install updates from the Windows Update Web site.
Offer updates again that I've previously hidden
OK
Cancel
Apply

NOTE Be aware that downloading and installing Windows Updates can be network and CPU usage intensive (impacting the instrument performance), and some Windows Updates automatically reboot the instrument. It is recommended that Windows Updates be performed when the instrument is not in normal use.

Virus protection

There is no antivirus software included with your instrument. Antivirus application software has been tested to be compatible with the instrument. See the section on "3rd party software verified by Agilent" on page 42 for anti-virus software that has been tested by Agilent.

NOTE Having antivirus software installed may have a slight impact on the instrument performance.


Recommendation
Security Center
Antivirus software helps protect your computer against viruses and other security threats.
Recommendation
• Make sure that your installed antivirus program is up to date and turned on.
Note: You'll need to make sure that you have a current subscription with your antivirus provider to do this.
or
• Get another antivirus program. How?
I have an antivirus program that I'll monitor myself.
Note: Windows won't monitor your virus protection status and won't send you alerts if it is off or out of date.
How does antivirus software help protect my computer?
OK
Cancel

Spyware protection

There is no anti-spyware software installed on the instrument. This should not be a problem if you do not use the instrument for a lot of internet browsing. Having spyware in the instrument could have an impact on the instrument performance.

System Maintenance

Backup

It is recommended that you have a regular backup strategy. Your IT department may already have a backup strategy in place which is suitable for the instrument and its data. Using the Agilent Recovery system in conjunction with a regular backup strategy should allow full recovery of the instrument data.

Windows XP has a Backup utility that you can use to archive files and folders in case of a hard disk drive failure. See the Microsoft Windows XP Help and Support Center for more information on this utility. You can also use third party backup utilities. However, you must ensure that this third party software is compatible with the instrument's system software. See “Customer Installation of Software” on page 42 for more information.

When performing backups, we recommend that you backup the data to an external storage device connected to the network or one of the instrument's USB connectors. Also, you should perform backups at times when the instrument is not being used for normal operations as it may impact the instrument's overall performance.

System restore

Windows XP contains the capability to restore the system to a previous point in time. System Restore is enabled with default settings as provided by Microsoft. However, System Restore is not 100% successful. Therefore, it is not the recommended method to backup the instrument. System Restore has not been tested to verify successful restoring.

Disk defragmenting

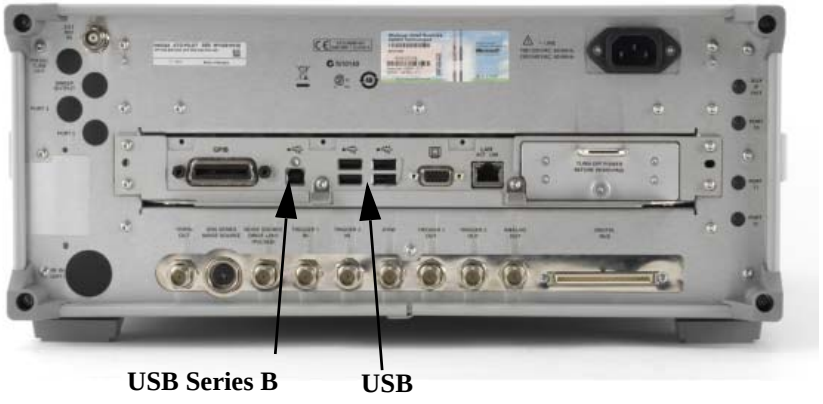
Over time the instrument’s hard disk becomes fragmented. Windows XP has a Disk Defragmenter utility that you can use to defragment the hard disk. See the Microsoft Windows XP Help and Support Center for more information on this utility.

NOTE Running Disk Defragmenter should be performed when the measurement application is not running. Measurement throughput is significantly impacted while disk defragmentation is in process. Press **File**, **Exit** to stop the application. To restart the application, double-click the application icon on the desktop.

USB Connections

All of the USB ports are compatible with the USB 2.0 and 1.1 specification. The two USB ports on the front panel (see graphic below) and four of the USB ports on the rear panel are USB Series “A” ports. These are ports to which you can connect USB mass storage devices and printers. The instrument USB Host support includes the standard Microsoft Windows XP USB class drivers for human interface, mass storage, printing, scanning, and imaging devices. A complete up-to-date list of the Windows XP USB class driver support is available on the Microsoft website.

The square USB port (see graphic below) on the rear panel is a USB Series “B” port and is used for controlling the instrument over USB. Information to help you program your instrument is documented in the **X-Series Programmer’s Guide**. The instrument USB device driver included in the instrument software supports the test and measurement industry standard USBTMC-USB488 device class.



In addition, the Agilent IO Libraries CD that was included with your instrument contains USB Host drivers that allow control of other instruments connected to the USB ports.

Agilent Technologies does not support or warrant correct instrument operation if additional USB drivers from third parties are installed in the instrument. It is possible that additional drivers could break the normal USB operation. If USB operation is broken, recovery would require reinstalling the instrument application using the hard drive recovery process.

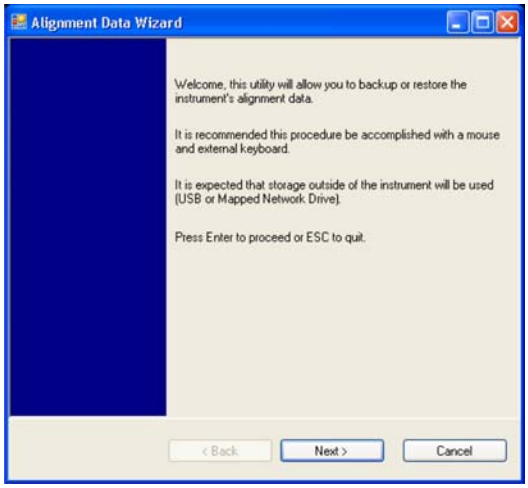
Disk Drive Partitioning and Use

The drive is partitioned into 3 sections: C:, D: and E:

- The **C: partition** contains the Windows XP operating system and software installed by Agilent. This is an Open System which means you can install additional software, and these should be installed on the C: drive. However, only a limited set of software applications are tested for use with the Agilent measurement software. The installation and/or use of other software is not warranted and could interfere with the operation of the measurement software. If instrument repair is ever needed, the Agilent version of the C: drive is the only part of the instrument software that is restored by the Agilent Recovery process. You must reload any other software that you have added in the instrument.
- The **D: partition** is reserved for data storage. The User Accounts that are configured by Agilent have their My Documents folder mapped to the D: drive. This is for the convenience of backing-up the measurement data. You should always back-up the data on the D: drive to an external device. This allows you to restore the data if you ever need to replace the hard drive.
- The **E: partition** is reserved for Agilent's use. The primary use of the E: drive is for housing the Calibration and Alignment data. Do not change or overwrite the files on this drive. This could cause your instrument to not meet specifications, or even to stop functioning correctly. Do not use this drive for data storage. It is also recommended that you back up the contents of this drive by using the factory calibration data backup utility.

Backing-up the factory calibration data

To back-up the factory calibration data you will need a USB mouse and storage device and follow the step below.

Step	Notes
1. Insert the mouse in one of the instrument USB ports	
2. Insert the USB memory device in one of the instrument USB ports.	
3. Press **System**, **Alignments**, **Backup or Restore Align Data...**	The Alignment Data Wizard will appear:  Alignment Data Wizard Welcome, this utility will allow you to backup or restore the instrument's alignment data. It is recommended this procedure be accomplished with a mouse and external keyboard. It is expected that storage outside of the instrument will be used (USB or Mapped Network Drive). Press Enter to proceed or ESC to quit. < Back Next > Cancel
4. Follow the on screen instructions to backup the calibration data to the USB drive and save the file.	

Disk Drive Recovery Process

The Agilent Recovery System can be used to repair errors on the instrument's C: drive partition or to restore the original factory configuration of the system software. The Agilent Recovery System is stored in a separate hidden hard disk drive partition.

Repairing errors on the hard disk drive may result in loss of data or files. If you need more information about the Windows “chkdsk” error repair process, see the chkdsk documentation in the Microsoft Windows XP Help and Support Center.

Restoring the original factory system software does not restore any of the following items:

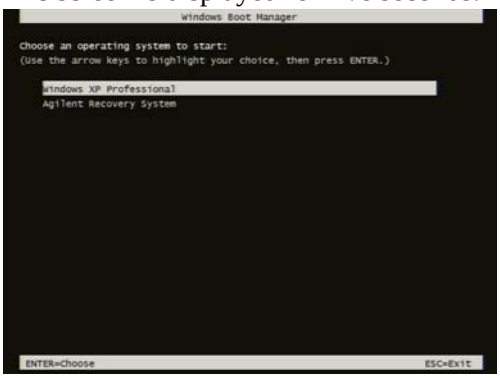
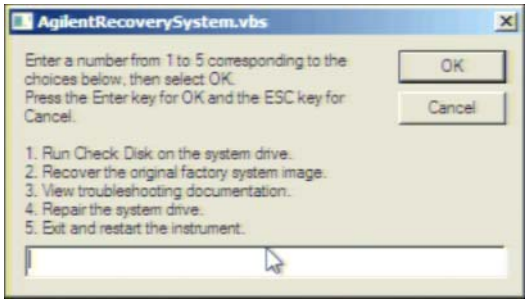
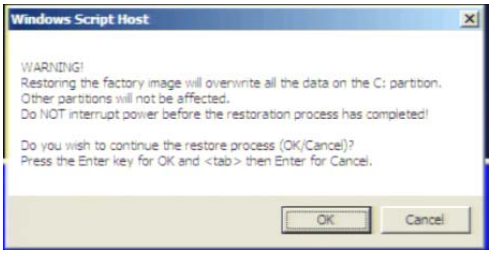
- Windows system configurations that were made after the instrument was shipped from the factory. For example, Windows and Service Pack updates, user accounts, and windows configuration settings. After an Agilent Recovery, these configurations need to be redone.
- Additional software that was installed after the instrument was shipped from the factory. After an Agilent Recovery, that software needs to be re-installed.
- Any data or programs saved on the D: or E: drives.
- Any upgrades that were made to the Agilent measurement application software.

Restoring the original factory system software will not synchronize the code in the Field Programmable Gate Arrays (FPGAs) on the various hardware assemblies. As a result, you may see an error dialog box appear during the final boot-up at the end of the recovery process. This typically occurs when there are significant differences between the software version installed prior to performing the recovery and the version restored by the recovery. In these situations, upgrade the software to the latest version.

NOTE It is recommended that you use a regular back up strategy. Your IT department may already have a back up strategy in place which is suitable for the instrument and its data. See “System Maintenance” on page 55. Using the Agilent Recovery System in conjunction with a regular back up strategy should allow you to fully recover the instrument software and data.

It is recommended that routine backups of the instrument information be performed to keep current archives of the instrument information. This allows a full recovery of the instrument information after the instrument recovery system operations are performed. See “Backup” on page 55 for more details.

Using the instrument recovery system

Step	Notes
1. Make sure the instrument is turned off.	
2. Turn on the instrument. • Press the down arrow key to move the highlight to **Agilent Recovery System**, then press **Enter**.	After the Agilent Technologies screen is displayed, This screen is displayed for five seconds. 
3. When the Agilent Recovery System has booted, follow the on-screen instructions to recover the image of the C: drive. • Press **2**, then press **Enter** to select the recovery.	
4. A warning message appears. • Press **Enter** to start the recovery, which may take up to 25 minutes to complete.	

After exiting the Agilent Recovery System, the instrument reboots. If the original factory instrument system has been restored, the instrument re-executes the following process:"Turning on the EMI Receiver the First Time" on page 12.

NOTE After the final reboot, you might see an error dialog box appear on the XSA applications's splash screen. This typically occurs when there is a significant difference between the software version installed prior to performing the recovery and the version restored by the recovery. For example, recovering from version A.02.06 to A.01.57 will often cause this to occur.

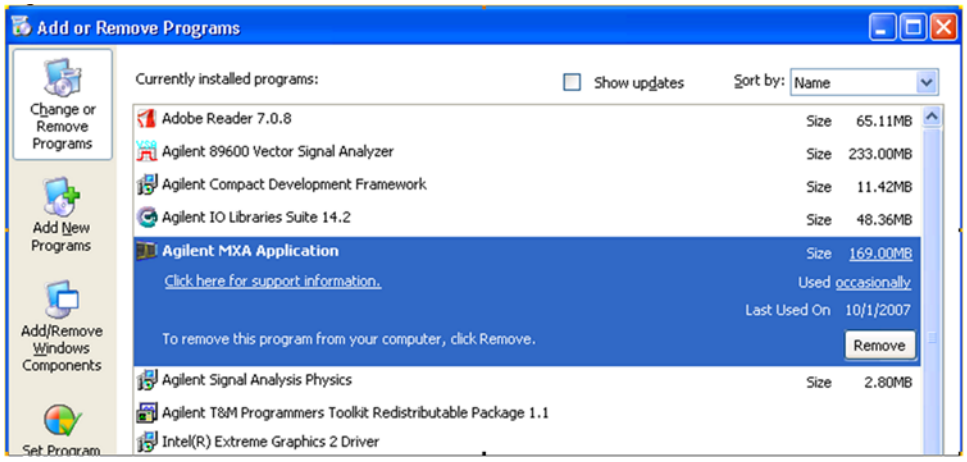
Updating the software

The following steps load a copy of the instrument software that forces the program code resident in the instrument's various programmable gate arrays to be in sync with the restored system software.

Removing the Software

Step	Action
1. Connect a USB keyboard and mouse to the instrument	
2. Log out of the default user (instrument):	• Select **Start**, **Log Off**, **Log Off**
3. At the log in prompt enter:	a. User Name: **administrator** b. Password: **agilent4u**
3. Uninstall the application:	a. Select **Start, Control Panel, Add or Remove Programs** b. Find the **Agilent X-Series Signal Analyzer Application**, and select **Remove**.

Removing the Software

Step	Action
	
4. When prompted to completely remove the selected application and all of its features	a. Select **Yes**. Select **OK** to any pop-up windows that appear. b. When the software uninstall is complete, select **Finish**.
5. Wait for the instrument to restart.	

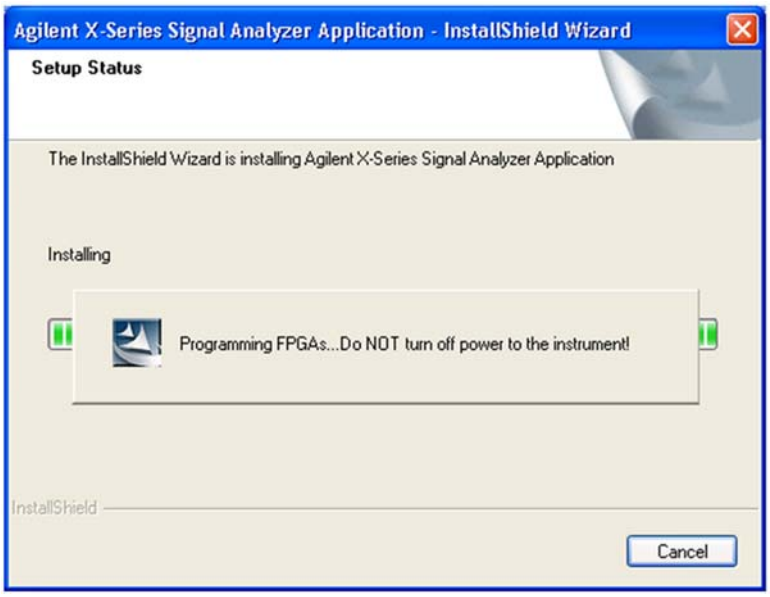
Installing the Software

Step	Notes
Log out of the default user (instrument): • Select **Start**, **Log Off**, **Log Off**	
At the log in prompt enter: • User Name: **administrator** • Password: **agilent4u**	
Navigate to C Drive: • Click **Start**, **My Computer**, **C: Drive** and open the **Temp** folder.	
Locate the software installer program: “`XSA_Installer_A.XX.XX.exe`”.	
Double-click on the installer.exe.	It may take a minute or two for the installer to start.

Installing the Software

Step	Notes
A window appears showing the extraction process.	Following the extraction screen, there may be a short period where there is no activity on the screen. The desk top may be displayed for a short period.
Follow the on-screen prompts to continue the installation.	

WARNING **When you see the message `Programming FPGAs...Do NOT turn off power to the instrument`, be sure to do as it says and DO NOT turn off the instrument power at this time for ANY reason. If this process is interrupted the instrument most likely will need to be sent back to an Agilent Service Center for servicing before it will be usable again.**


Agilent X-Series Signal Analyzer Application - InstallShield Wizard
Setup Status
The InstallShield Wizard is installing Agilent X-Series Signal Analyzer Application
Installing
Programming FPGAs...Do NOT turn off power to the instrument!
InstallShield
Cancel

NOTE The installation process can take up to 45 minutes. Do not turn the instrument power off or serious damage may occur. If any pop up windows appear, click **OK** or **Ignore** to proceed.

When the installation has finished, select **Yes, I want to restart my computer now**, **Finish**.

After the instrument restarts, the newly installed version of the X-Series instrument software will run.

It is possible a newer version of the instrument software is available on the web at http://www.agilent.com/find/mxe_software.

NOTE Additional recovery steps may be required to fully recover the system to a more current working state. This could involve restoring your own backups of the instrument configuration, including re-installing applications, data, and performing system customizations.

5 Using Microsoft Windows XP

NOTE The capabilities described in this section are Microsoft Windows XP features. The discussion provided here gives some guidelines for using the capabilities with the instrument. You need to refer to the Windows XP help documentation for more information. Your version of Windows may not match these instructions exactly.

You need an external keyboard and mouse to fully use these features.

"Navigating Windows Without a Mouse" on page 66

"Remote Desktop: Using the X-Series Instruments Remotely" on page 70

"Embedded Web Server: Using the X-Series Instruments Remotely" on page 85

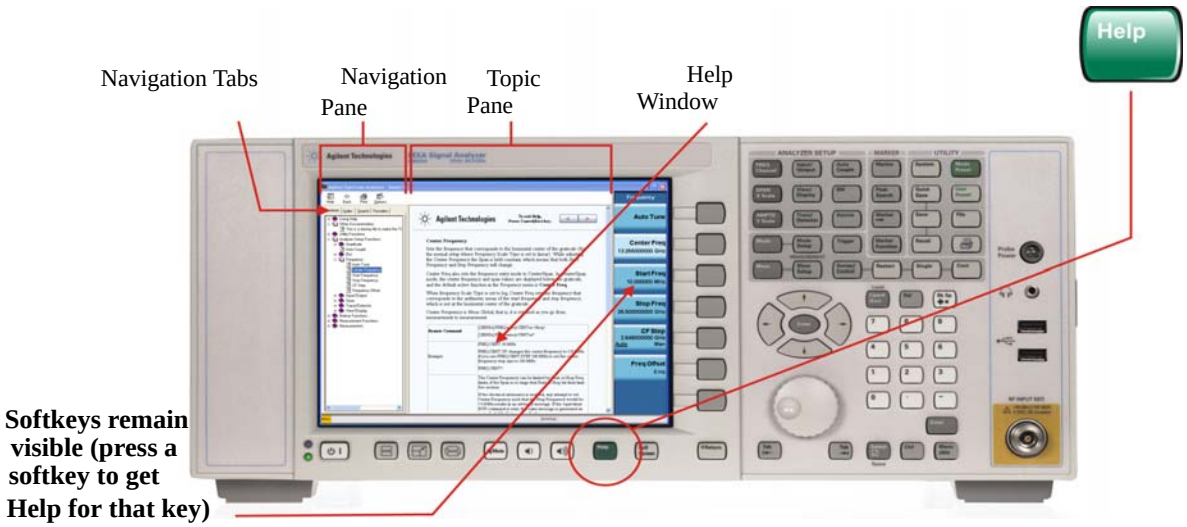
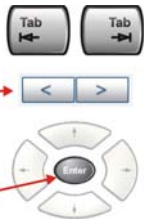
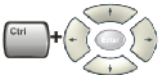
"Capturing/Printing Displays and Windows" on page 96

"Windows Shortcuts and Miscellaneous Tasks" on page 97

Navigating Windows Without a Mouse

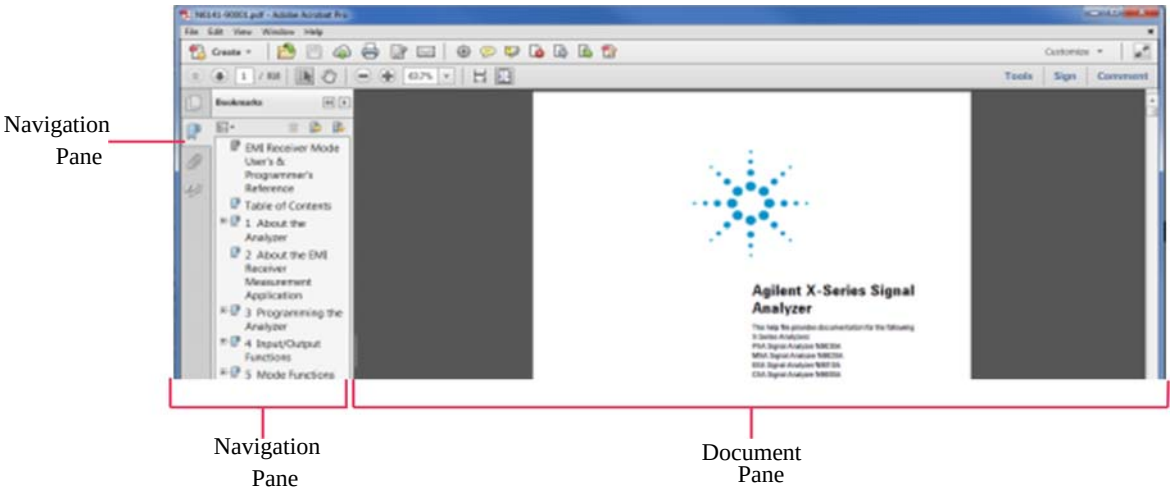
Key Presses	Actions
Esc	Exits/closes a Windows dialog box (does not exit an Application window)
Enter	Does the current "default action". If a menu item or a button is currently highlighted, then the Enter key activates that menu item or button.
Alt	Moves focus/control to the pull down menus bar in the active Window
Right Arrow	In pull-down menu: opens the next menu to the right, or opens a submenu In a dialog box: selects an option button
Left Arrow	In pull-down menu: opens the next menu to the left, or opens a submenu In dialog box: selects an option button
Up Arrow	In pull-down menu: Moves to next selection up in the menu In dialog box: selects an option button
Down Arrow	In pull-down menu: Moves to next selection down in the menu In dialog box: selects an option button
Tab	In dialog box: moves to the next/previous field
Del	Deletes the currently selected item
Alt + **Tab**	Switches between the next/previous Application
Alt + **Enter**	Shows the Properties of the currently selected item
Alt + **Esc**	Cycles through items in the order that they had been opened
Backspace	In My Computer or Windows Explorer: move up one level In Internet Explorer: works like the BACK arrow key
Ctrl + **Left arrow**	Moves to the left one word at a time
Ctrl + **Right arrow**	Moves to the right one word at a time
Ctrl + **Tab**	In dialog box: moves to the next/previous Tab location
Alt + **Space**	Opens the window control menu for the currently active window, allowing you to minimize, maximize, move and restore (size) the window
Ctrl + **Esc**	Opens the Windows Start Menu
Ctrl + **Alt** + **Delete**	Opens the Windows Task Manager

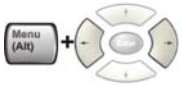
Using the interactive Help system without a mouse

To open the Help window for any menu	**Choose the desired menu, then press the front panel green Help key.**
	
To toggle focus between the Navigation and topic panes:	Press the **Next Window** key
In the navigation pane	**In the topic pane**
To scroll up or down the topic list: Press the **Up** or **Down Arrow** key.	To scroll up or down: Press the **Up** or **Down Arrow** key.
To expand or collapse the tree for the selected topic: Press the **Right** or **Left Arrow** key.	To go to the next or previous page: Use the **Tab** keys to select the **Right** or **Left** pointer button (in the Topic Pane) Press **Enter**. 
To display the selected topic: Press the **Enter** key.	
To scroll horizontally or vertically: Press **Ctrl+Left**, **Right**, **Up**, or **Down Arrow** keys. 	To go back or forward: Press the **Alt+Left** or **Right Arrow** key.
To switch tabs: Press **Ctrl+Tab** keys.	
To close the Help window: Press the **Cancel (Esc)** key.	

Navigating Acrobat (PDF) without a mouse

When you open an Acrobat (PDF) document, it is displayed in the Adobe Reader Window, which appears as shown below.



In the navigation pane	In the document pane
To go to next or previous Bookmark: Press the **Up** or **Down Arrow** key.	To scroll up or down: Press the **Up** or **Down Arrow** key.
To expand or collapse the selected Bookmark: Press the **Right** or **Left Arrow** key.	To zoom in or out: Press the **Alt+Left** or **Right Arrow** key. 
To display the content of the selected Bookmark: Press the **Enter** key.	To Zoom to: a) Fit page in window: Press **Ctrl** + **0** keys b) Page actual size Press **Ctrl** + **1** keys c) Fit page to width Press **Ctrl** + **2** keys c) Fit visible object Press **Ctrl** + **3** keys
To switch tabs: Press **Ctrl+Tab** keys.	

In the navigation pane	**In the document pane**
To select Thumbnails, and Display pages (from Pages Tab): Press the **Left**/**Right**/**Up**/**Down** keys to navigate, then press **Enter** to display a selected Page.	To go to a specific page: Press the **Next Window** key to open the **Go to Page** dialog, then enter the page number using the Numeric keypad, and press **Enter.**
To print all or part of a document: Press the Print key to open the Adobe Reader Print Dialog, then use the Tab keys to set options, and select OK to print.	
To Exit Adobe Reader: Press **Alt + Select** keys to open the File menu. Use the **Down Arrow** key to select **Exit**, then press **Enter**.	

Remote Desktop: Using the X-Series Instruments Remotely

Windows Remote Desktop is recommended for remote control of the instrument. It offers fully-interactive control, that is almost identical to direct face-to-face control of the instrument. You can also remotely control the instrument using the Embedded Web Server interface. The Embedded Web Server functionality provides a communications method that does not require login to the instrument. However, due to its slower response time, it is only recommended for setup and data exchanges that do not involve instrument control.

NOTE The Remote Desktop functionality is a Microsoft Windows XP capability. The following discussion provides some guidelines for using this capability with the instrument. You need to refer to the Windows XP help documentation for more information. As Windows evolves, these instructions may no longer be exact.

You need an external keyboard and mouse to fully use this functionality.

Overview of Remote Desktop operation

Using the Remote Desktop functionality of the instrument allows you to control and interact with the instrument from a remote computer as though you were sitting in front of the instrument.

When you have configured the instrument for remote connectivity, and configured a separate computer to act as a Remote Desktop Host, you can send commands to the instrument from the remote computer, and you can see the instrument display on the screen of the remote computer.

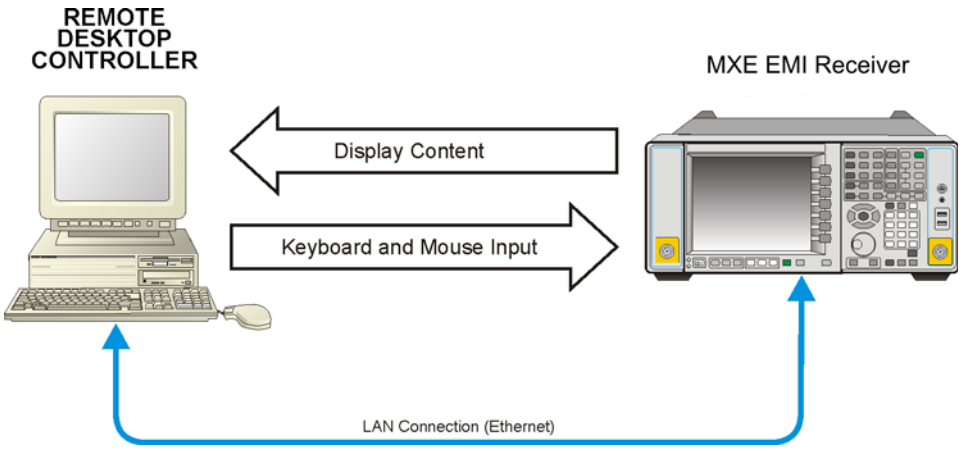
This section provides full details of how to set up the instrument for remote connectivity, and also how to set up a computer running any 32-bit version of Microsoft Windows as a Remote Desktop Host.

Setting up Remote Desktop operation

Setting up the instrument

Before the instrument can be controlled through a Remote Desktop Connection, it must be set up to allow connection from a remote computer.

Basic setup for remote desktop operation



Setting up a remote desktop connection

Step	Action
1. To perform this operation successfully, you must have Administrator level access to the instrument.	a. On the instrument, open the Windows **Control Panel.** b. From the instrument application, press **System**, **Control Panel**, **or**, From the Windows Desktop, click **Start**, **Control Panel.**
2. Select **System**	a. From the Control Panel Category View, click **Performance and Maintenance**, then click **System**. **or**, From the Control Panel Classic View, double-click **System**.
3. Connect to Remote Desktop	a. Click the **Remote** tab. **NOTE** A Warning Message appears, informing you that it may be necessary to configure your internet connection sharing or personal firewall to permit Remote Desktop connections. The details of such configuration are beyond the scope of this document. b. Click the **Allow users to connect remotely to this computer** checkbox.

Setting up a remote desktop connection

Step	Action
1. To add users	a. Click **Select Remote Users**, **Add**. b. Follow the on screen instructions.

Setting up the remote computer

The procedure depends on whether the Remote Computer to be set up is running Windows XP, or another version of Microsoft Windows.

Remote computer running Windows XP

Windows XP includes the Remote Desktop Connectivity Client software, so no additional setup is required.

Remote computer running another version of Windows

You can use any 32-bit version of Windows (Windows 95, 98, ME, NT4, or 2000) to install and run the Client software for Remote Desktop Connectivity. However, you need to have available a Windows XP installation CD-ROM, because that contains the Client software.

NOTE The following instructions relate to software provided by Microsoft Corporation. Agilent offers no warranty regarding the operation of such software. The procedure described here may be changed by Microsoft at some future time.

Installing the Client software

Step	Notes
1. When the Welcome Screen appears, click **Perform additional tasks**.	
2. From the **What do you want to do?** screen, click **Set up Remote Desktop Connection**.	The Remote Desktop Connection InstallShield Wizard appears.
3. Click **Next**.	Follow the on screen instructions provided by the Wizard.
4. To access the installed software, click **Start** > **All Programs** > **Accessories** > **Communications** > **Remote Desktop Connection**.	

How to locate the computer name of the instrument

To connect a remote computer to the instrument, you need to know its Computer Name. The Computer Name can be displayed as follows:

Locating the name from the Agilent application

Step	Notes
• On the instrument front panel, press **System**, **Show**, **System**.	A page listing various parameters appears.The instrument's computer name is shown in the list next to the title Computer Name.

Locating the name from the Windows desktop (with a mouse):

Step	Notes
1. Click **Start**, **Control Panel**.	If the Control Panel window appears in Category View, click **Performance and Maintenance**, then **System**, to display the System Properties dialog. If the Control Panel appears in Classic View, double-click **System** to display the System Properties dialog.
2. Click the **Computer Name** tab of the System Properties dialog.	
3. To close the System Properties dialog, click **Cancel**.	

Locating the name from the Windows desktop (without a mouse):

Step	Notes
1. Press **Ctrl+Esc** to display the Windows **Start** menu.	
2. Use the **Up Arrow** or **Down Arrow** keys to select the **Control Panel** item.	
3. Press **Enter** to open the Control Panel dialog.	

Locating the name from the Windows desktop (without a mouse):

Step	Notes
4. In Category View, press **Tab** to select **Performance and Maintenance**, then press the **Tab** again to select **System**, or, in Classic View, press the **Tab** and the **Arrow** keys to select **System**, then press **Enter**.	The System Properties dialog is displayed.
5. Press **Ctrl+Tab** until the **Computer Name** tab is selected.	The Computer Name is displayed under **Full computer name**.
6. Press **Tab** to select the **Cancel** button, then press **Enter**.	
7. To close the Control Panel dialog: a. Press **Alt+Select** to open the drop-down `File` menu b. Press the **Down Arrow** until the **Close** menu item is selected c. Press **Enter** to close the Control Panel dialog.	

Running a Remote Desktop session

Initializing a Remote Desktop session

NOTE To initialize a Remote Desktop Session, you need to know the Computer Name of the instrument. This information can be shown on the instrument display by following the procedure in the section "How to locate the computer name of the instrument" on page 73.

After setting up both the instrument and the remote computer for Remote Desktop Connectivity, as described in "Setting up Remote Desktop operation" on page 70, you are ready to start a Remote Desktop session.

Starting a session

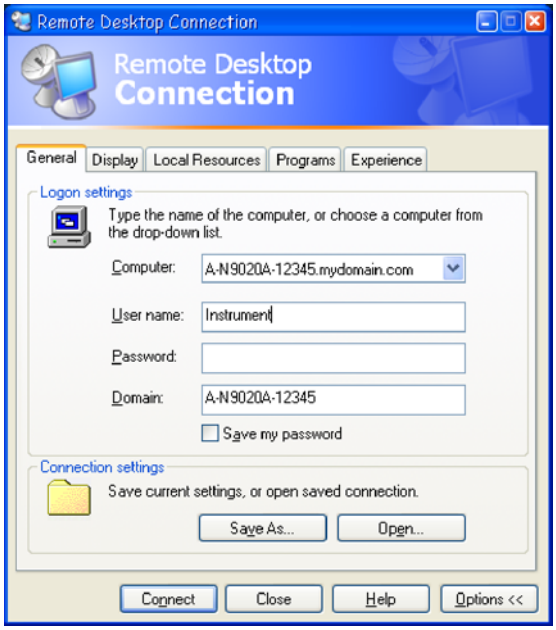
Step	Notes
1. Click **Start** > **All Programs** > **Accessories** > **Communications** > **Remote Desktop Connection.**	A Remote Desktop Connection dialog appears:
2. Enter the computer name of the instrument.	
3. Click **Connect**.	A login dialog box appears.
4. Enter the login account name and password.	The default account name is **Instrument** and the default password is **measure4u**, but these parameters may be changed by instrument users.

NOTE Only the current User or an Administrator can remotely log into the instrument. To see who the current user of the instrument is, press **Ctrl**+**Esc** on the instrument until you can view the current user name on the Start menu. If no one is currently logged into the instrument, any valid instrument user can remotely log in.

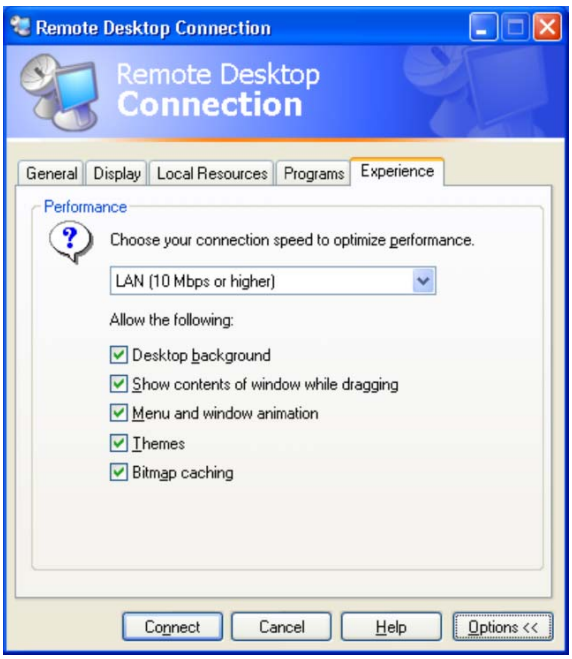
The instrument display appears on the screen of the remote computer. Because the instrument front-panel keys are not available when using the instrument remotely, three alternative methods are available to perform the functions of the front-panel keys, as detailed in the following sections:

- “Accessing menus for Remote Desktop operation” on page 79
- “Keycode commands for Remote Desktop operation” on page 80
- “The Virtual Front Panel” on page 84

Setting Remote Desktop options

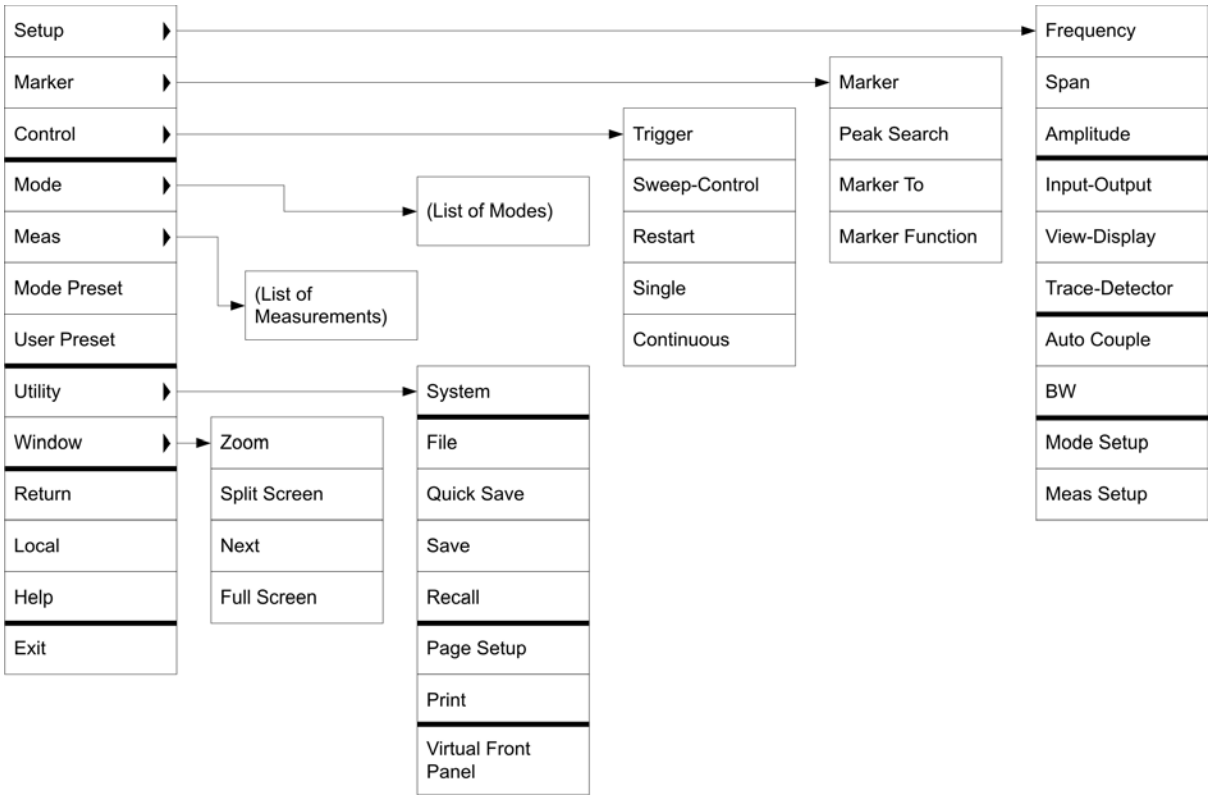
Step	Notes
1. On the Remote Desktop Connection menu, click **Options**.	 The Options dialog has several tabs. Generally, the default settings are correct.
2. Under the **General** tab, ensure that the Computer name, User name and Domain name are set correctly.	You may choose to enter the password and save it for future sessions, by checking the **Save my password** box.

Step	Notes
3. Click the **Display** tab. a. Under **Remote desktop size**, you may select the size of the window in which the instrument display appears. Do **not** select any size smaller than 1024 x 768 pixels. Selecting a remote desktop size smaller than 1024 x 768 results in the instrument display not being fully visible. In such circumstances, scroll bars do not appear, so portions of the display are not accessible. b. Under **Colors**, you may select any setting that uses 16 bits or more. Selecting a color setting that uses less than 16 bits results in dithering and incorrect color rendition of the remote desktop window.	

Step	Notes
4. Click the **Local Resources** tab. a. Selecting the **Disk Drives** checkbox enables you to transfer data between the remote desktop and the local PC. b. To transfer data, click **Start** on the task bar of the remote computer, then click **My Computer**.	 Explorer opens on the remote computer and displays the drives of both the remote computer and the local computer. You can now copy and paste between the two disk drives.
5. Click the **Experience** tab.	To Optimize the performance of the Remote Desktop session, choose the appropriate connection format from the drop-down list. 

Accessing menus for Remote Desktop operation

Using the mouse, right-click the application display window to access the following remote desktop menus, which may be used as an alternative to the front-panel keys:.



The function of each selection in the menu is generally identical to that of the corresponding front-panel key. The following lists additional functionality:

Exit – Selecting this item closes the Application software.

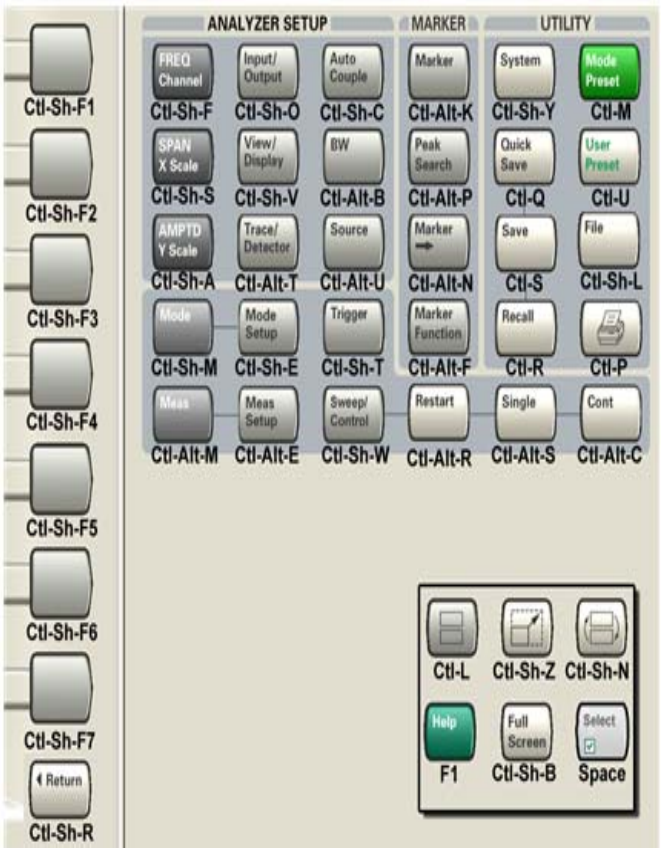
Utility > **Page Setup** – Selecting this item opens a printer setup dialog.

Utility > **Virtual Front Panel** – Selecting this item opens the Virtual Front Panel window, as described in the Section "The Virtual Front Panel" on page 84.

NOTE The menus are also available when using the instrument directly, provided that a mouse or other pointing device is attached to it.

Keycode commands for Remote Desktop operation

When using the instrument in remote desktop mode, the following combinations of remote keyboard keys can be used to perform the operation of the instrument front-panel keys.



Keycode commands

To initiate the following front-panel key:	Press these keys on the remote computer keyboard:
AMPTD Y Scale	**Ctrl**+**Shift**+**A**
Auto Couple	**Ctrl**+**Shift**+**C**
Bk Sp	Backspace
BW	**Ctrl**+**Alt**+**B**
Cancel (Esc)	**Esc**
Cont	**Ctrl**+**Alt**+**C**
Ctrl	**Ctrl**
Decrease Audio Volume	the Volume Control slider

Keycode commands

To initiate the following front-panel key:	Press these keys on the remote computer keyboard:
Del	**Delete**
Down Arrow	Down Arrow
Enter	**Enter (Return)**
File	**Ctrl**+Shift+L
FREQ Channel	**Ctrl**+**Shift**+**F**
Full Screen	**Ctrl**+**Shift**+**B**
Help	**F1**
Increase Audio Volume	the Volume Control slider
Input/Output	**Ctrl**+**Shift**+**O**
Left Arrow	Left Arrow
Marker	**Ctrl**+**Alt**+**K**
Marker ->	**Ctrl**+**Alt**+**N**
Marker Function	**Ctrl**+**Alt**+**F**
Meas	**Ctrl**+**Alt**+**M**
Meas Setup	**Ctrl**+**Alt**+**E**
Menu (Alt)	**Alt**
Mode	**Ctrl**+**Shift**+**M**
Mode Preset	**Ctrl**+**M**
Mode Setup	**Ctrl**+**Shift**+**E**
Mute	the **Mute** checkbox under the Volume Control
Next Window	**Ctrl**+**Shift**+**N**
Peak Search	**Ctrl**+**Alt**+**P**
Print	**Ctrl**+**P**
Quick Save	**Ctrl**+**Q**
Recall	**Ctrl**+**R**
Restart	**Ctrl**+**Alt**+**R**
Return	**Ctrl**+**Shift**+**R**

Keycode commands

To initiate the following front-panel key:	Press these keys on the remote computer keyboard:
Right Arrow	Right Arrow
Save	**Ctrl**+**S**
Select	Space Bar
Single	**Ctrl**+**Alt**+**S**
Softkey 1	**Ctrl**+**Shift**+**F1**
Softkey 2	**Ctrl**+**Shift**+**F2**
Softkey 3	**Ctrl**+**Shift**+**F3**
Softkey 4	**Ctrl**+**Shift**+**F4**
Softkey 5	**Ctrl**+**Shift**+**F5**
Softkey 6	**Ctrl**+**Shift**+**F6**
Softkey 7	**Ctrl**+**Shift**+**F7**
Source	**Ctrl**+**Alt**+**U**
SPAN X Scale	**Ctrl**+**Shift**+**S**
Split Screen	**Ctrl**+**L**
Sweep/Control	**Ctrl**+**Shift**+**W**
System	**Ctrl**+**Shift**+**Y**
Tab	**Tab**
Trace/Detector	**Ctrl**+**Alt**+**T**
Trigger	**Ctrl**+**Shift**+**T**
Up Arrow	Up Arrow
User Preset	**Ctrl**+**U**
View/Display	**Ctrl**+**Shift**+**V**
Zoom	**Ctrl**+**Shift**+**Z**
1	**1**[a]
2	**2**[a]
3	**3**[a]
4	**4**[a]

Keycode commands

To initiate the following front-panel key:	Press these keys on the remote computer keyboard:
5	**5**[a]
6	**6**[a]
7	**7**[a]
8	**8**[a]
9	**9**[a]
–	Use the **–** key to enter a negative value, as appropriate[a]
. (Decimal Point)	**.** (Period)[a]
0 (Zero)	**0** (Zero)[a]

a. For remote keyboards that feature a numeric keypad, use either the appropriate numeric keypad key or the main keypad key.

NOTE The effect of pressing **Ctrl+Alt+Delete** on the keyboard of the remote computer **always** applies to the remote computer, and not to the Instrument. Generally, the effect of pressing this key combination is to display the Windows Task Manager. Therefore, pressing this key combination on the remote computer does **not** allow you to reboot the Instrument.

Ending a Remote Desktop session

There are two ways to disconnect the remote computer from the instrument, ending the session:

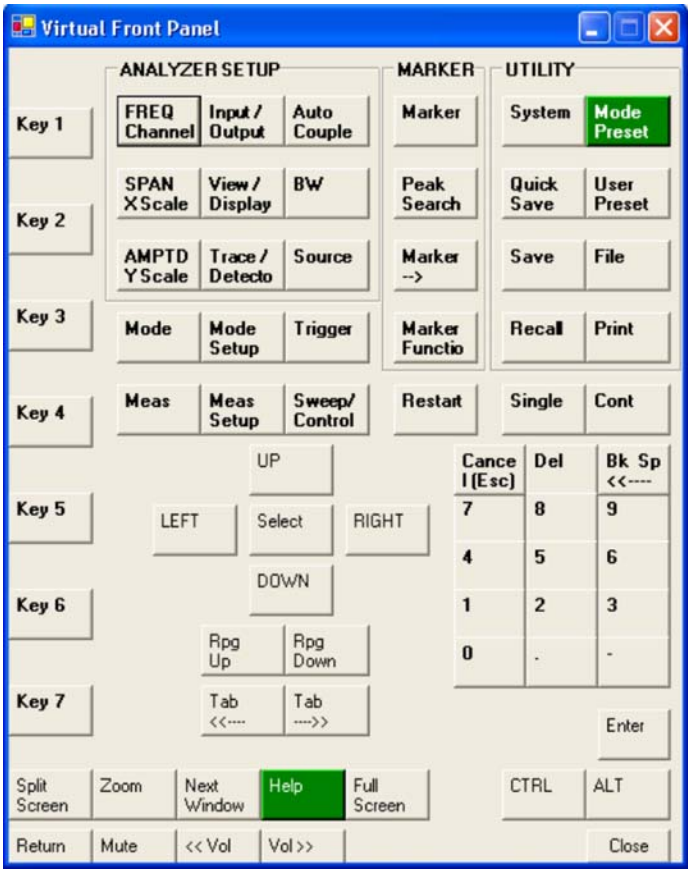
Step	Notes
• Click the **X**, then click **OK**. or When the remote desktop is full screen, move the cursor to the bottom left of the window: a. Click **Start**, **Disconnect**. b. Click **Disconnect**.	For full-screen, the X appears at the top center of the window. For non full-screen, the X appears in a red box at the right of the window's title bar. You are asked to confirm that you want to disconnect.

The Virtual Front Panel

The Virtual Front Panel is a software equivalent of the front-panel key set, which provides another alternate method for instrument control. It may be displayed in a separate window on the instrument (or remote desktop) display.

NOTE The Virtual Front Panel is also available when using the instrument directly, provided that a mouse or other pointing device is attached to it.

Using the mouse, right-click the application display window, then select **Utility** > **Virtual Front Panel**. The Virtual Front Panel appears, as shown below:



When you click a button in the Virtual Front Panel, it performs the operation of the corresponding instrument front-panel key. The buttons at the left of the panel, named `Key 1` through `Key 7`, perform the operation of the respective softkeys. The `Rpg Up` and `Rpg Down` keys perform the operation of the knob.

Embedded Web Server: Using the X-Series Instruments Remotely

The instrument can be controlled using either the Embedded Web Server or Windows Remote Desktop. The Embedded Web Server is a good solution when you do not want to log into the instrument's user account. This allows you to view the display or control the instrument, without logging the current user off. Windows Remote Desktop must be used when the remote computer keyboard is needed as an input device (such as for editing filenames, or setting the title.) Also, Windows Remote Desktop generally has a faster response time.

Accessing the instrument through the Internet

It is possible to access and control the instrument through the Internet and World Wide Web, or a local internet, using the built-in Embedded Server functionality. This section provides details of how to use this functionality.

The instrument may also be accessed and controlled using the Windows Remote Desktop functionality (see the section “Remote Desktop: Using the X-Series Instruments Remotely” on page 70, for details).

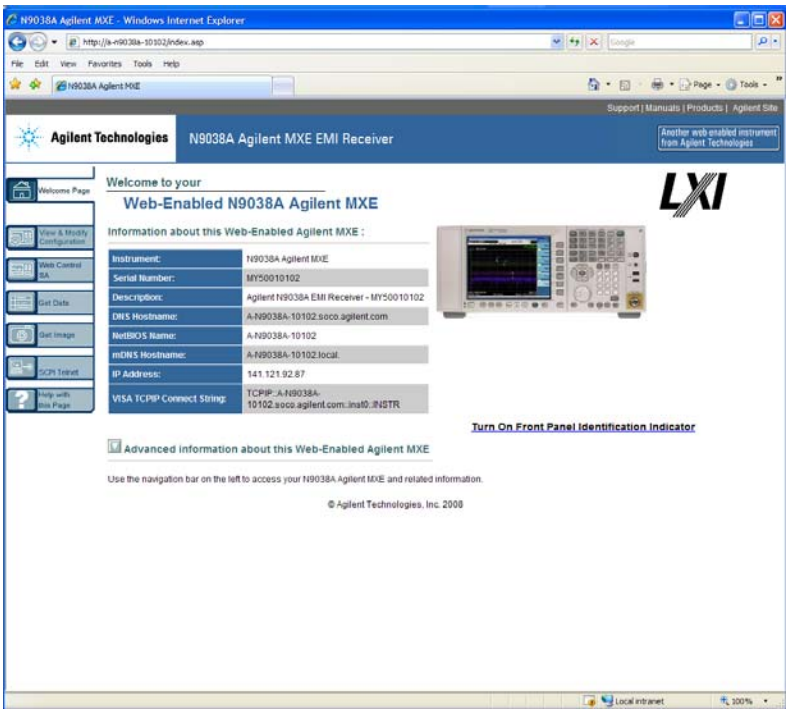
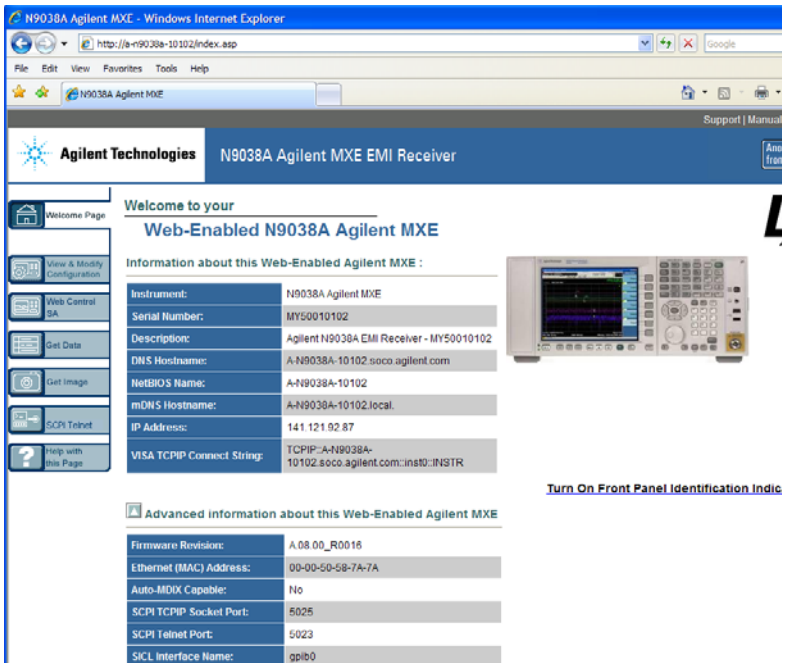
The instrument Embedded Server capabilities are fully compliant with the LXI (LAN eXtensions for Instrumentation) standard.

NOTE To gain access to the instrument from the LAN, you need to know its hostname (or IP Address). For details of how to locate this information using the instrument Display, see “How to locate the computer name of the instrument” on page 73.

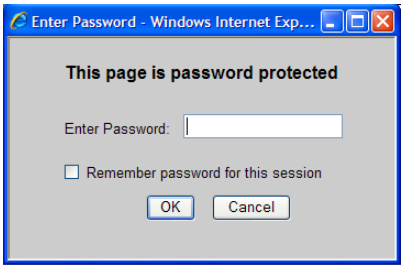
Accessing the instrument

Step	Notes
1. Enter a URL corresponding to the instrument hostname or IP Address.	**NOTE** This functionality is only fully supported when using Internet Explorer. In this example, the host name is “a-n9020a-10010”.
	When the connection is made, the welcome page appears.

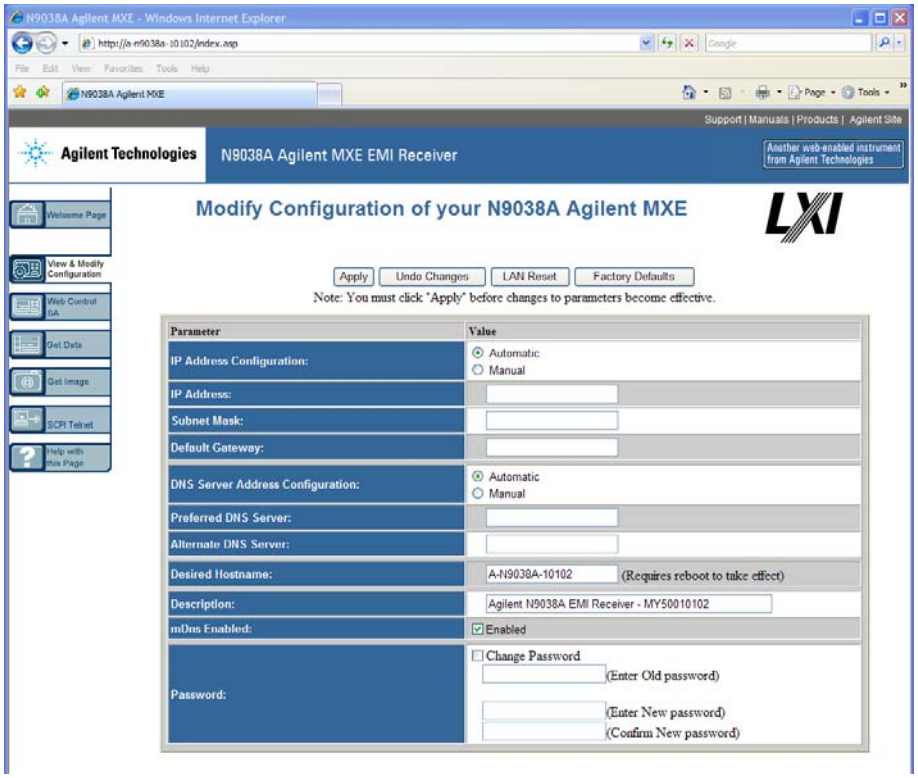
Accessing the instrument

Step	Notes
	
2. Click **Advanced information about this Web-Enabled MXE**	This displays further settings and configuration information.
	At the left side of the page are a set of tabs that provide access to configuration information for the instrument, plus the ability to control it through the web interface.

Selecting the View and Modify Configuration tab

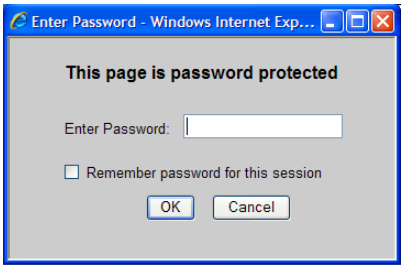
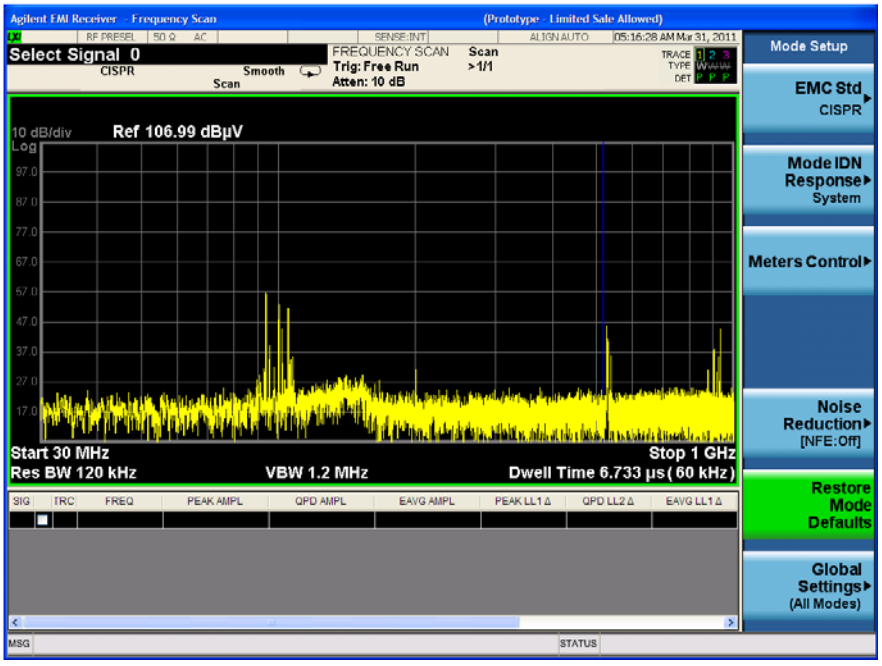
Step	Notes
1. Click **Verify and Modify Configuration**.	This displays a web page, which shows the instrument's currently-assigned IP address and other TCP/IP parameters.
2. Click on either of the **Modify Configuration** buttons.	A password entry dialog appears.
	By default, this password is set at the factory as "agilent". However, you may subsequently change the password. (Press **System**, **I/O** Config, **Reset Web Password** on the instrument front panel to change the password.) When the correct password has been entered, the Modify Configuration web page appears.

Selecting the View and Modify Configuration tab

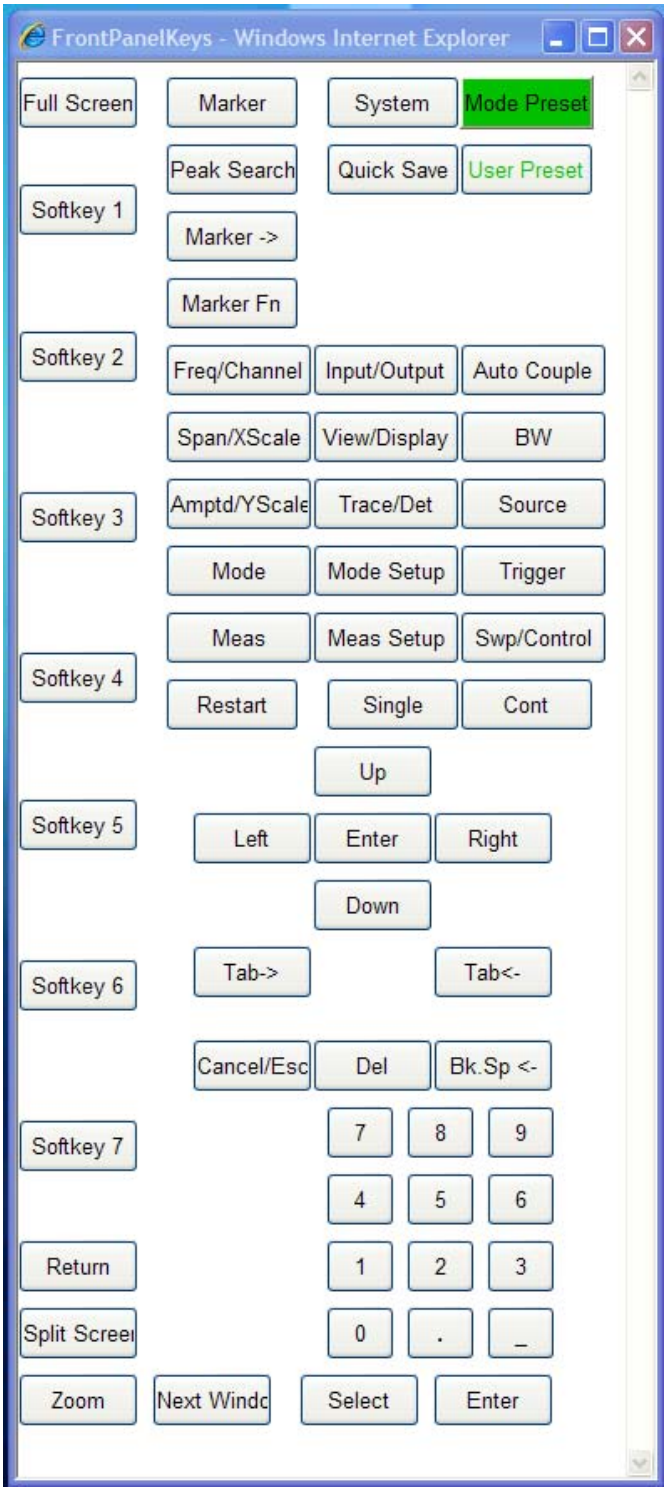
Step	Notes
	
3. Enter new settings as required, then click **Apply** to cause the new settings to take effect.	Before clicking Apply, you may use the **Undo Changes** button to revert all settings to their previous values.
4. Use **Start Identify** and **Stop Identify** to enable and disable the LXI status indicator in the instrument.	**NOTE** Tool tips are available for each of the configuration buttons on this page.

Accessing the Web Control SA tab

Selecting this tab lets you view, control and interact with the instrument through the web server.

Step	Notes
1. Click **Control**	A password entry dialog appears.
	By default, this password is set at the factory as “agilent”. However, you may subsequently change the password. (Press **System**, **I/O Config**, **Reset Web Password** on the instrument front panel to change the password.) When the correct password is entered, the instrument control web page appears. **NOTE** To view the instrument display, the instrument application must be running.
	
2. Click **Display Front Panel Keys**	This brings up a virtual keyboard that can be used to control the instrument.

Step	Notes


FrontPanelKeys - Windows Internet Explorer
Full Screen
Marker
System
Mode Preset
Peak Search
Quick Save
User Preset
Softkey 1
Marker ->
Marker Fn
Softkey 2
Freq/Channel
Input/Output
Auto Couple
Span/XScale
View/Display
BW
Softkey 3
Amptd/YScale
Trace/Det
Source
Mode
Mode Setup
Trigger
Meas
Meas Setup
Swp/Control
Softkey 4
Restart
Single
Cont
Up
Softkey 5
Left
Enter
Right
Down
Softkey 6
Tab->
Tab<-
Cancel/Esc
Del
Bk.Sp <-
Softkey 7
7
8
9
4
5
6
Return
1
2
3
Split Scree
0
.
_
Zoom
Next Windc
Select
Enter

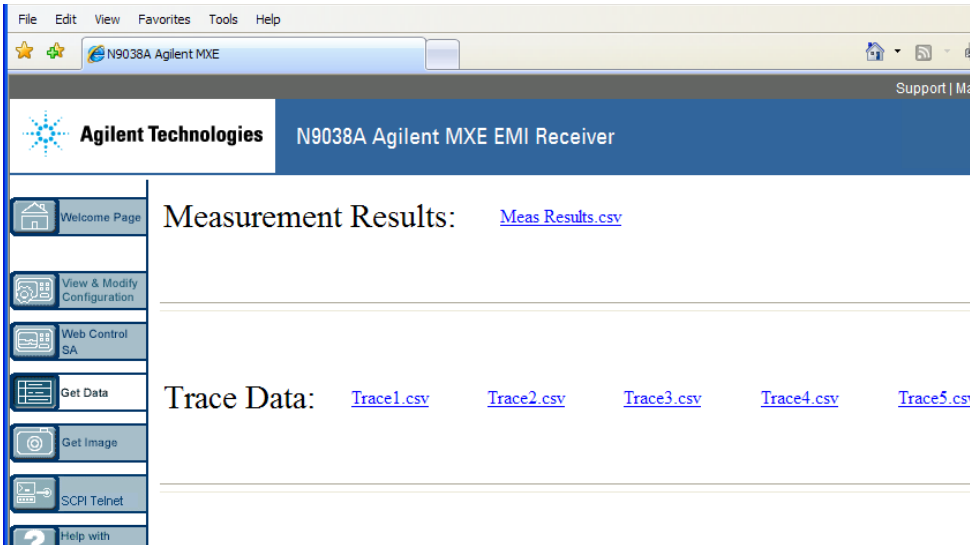
Selecting the Get Data tab

Selecting the Get Data tab allows you to capture results from the instrument's currently active measurement. Depending on the current measurement type, captured results consist of either Trace Data or Measurement Results.

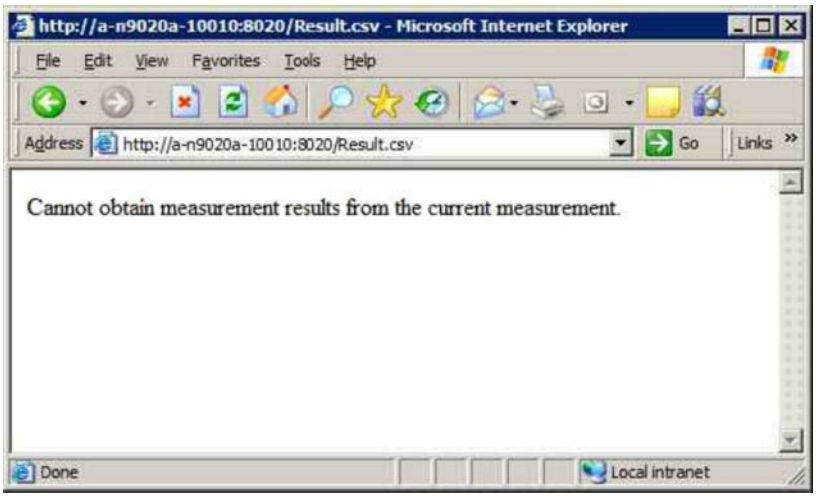
NOTE To capture data using the web server, the instrument application must be running.

The captured data is formatted as a Comma Separated Value (CSV) file, which may be saved on the client computer's hard disk, or opened with a spreadsheet application such as Microsoft Excel, or imported into a database application such as Microsoft Access.

A typical Get Data web page display is shown below:



If the measurement currently running does not support the selected result type, the web page indicates this:



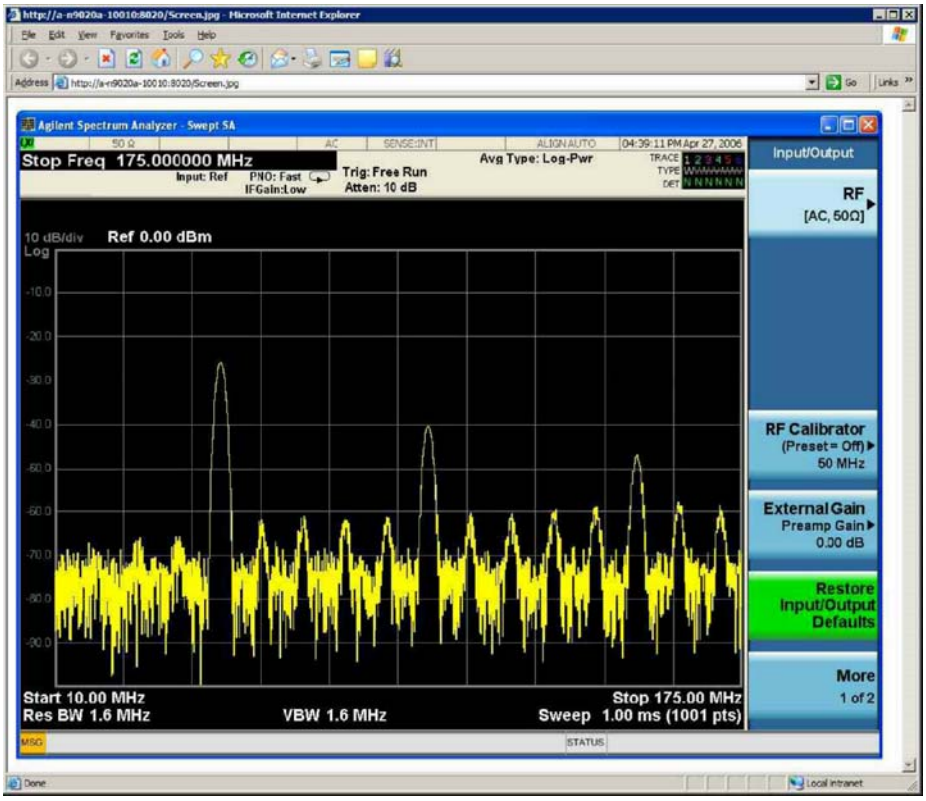
Selecting the Get Image tab

Selecting the Get Image tab captures a screen image from the Instrument display.

NOTE To capture a screen image using the web server, the Instrument Application must be running.

The image is captured as a Portable Network Graphics (PNG) file, to the default file name `Screen.png`. The image file can be saved to the client computer hard disk, or copied to the Windows clipboard.

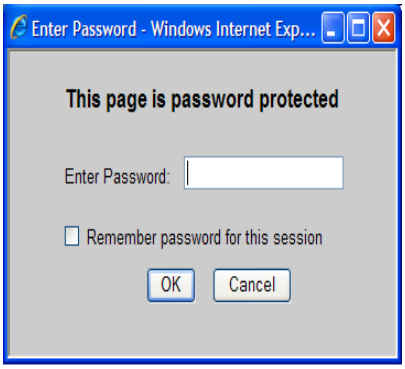
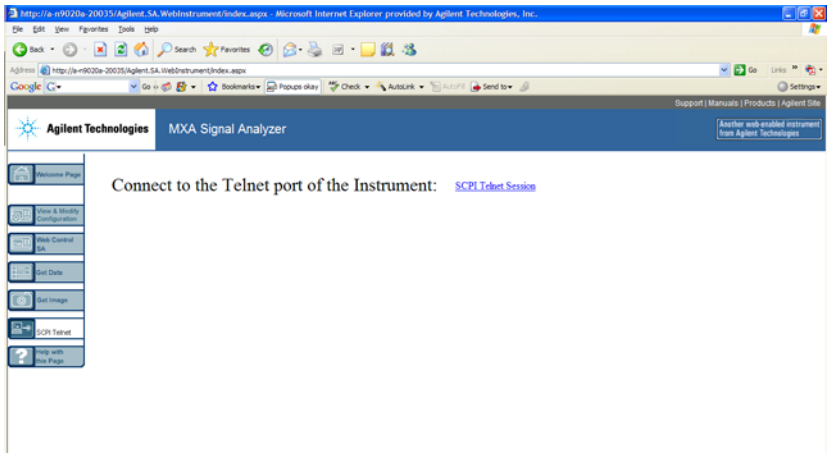
A typical screen capture image appears as follows:



Selecting the SCPI Telnet tab

Selecting the SCPI Telnet tab opens a Telnet session between the instrument and the client computer. The instrument TCP/IP port used for SCPI access is 5023.

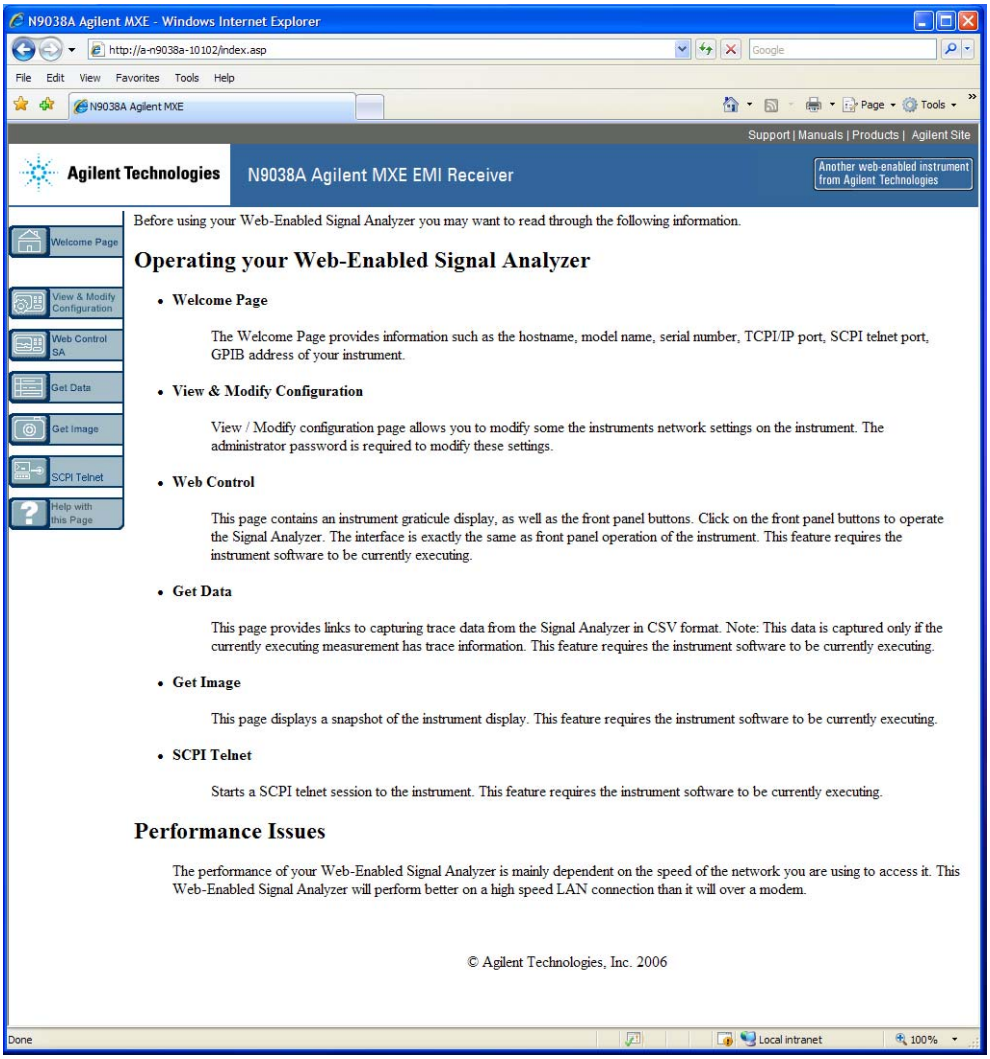
NOTE To run a SCPI Telnet session, the instrument application must be running.

Step	Notes
1. Click **SCPI Telnet**	A password entry dialog appears.
	By default, this password is set at the factory as “agilent”. However, you may subsequently change the password. (Press **System**, **I/O Config**, **Reset Web Password** on the instrument front panel to change the password.) When the correct password is entered, the connection window appears.
	
2. Click **SCPI Telnet Session**	The telnet command line interface appears.

Step	Notes
	SCPI commands and queries may be entered using the command line interface.
3. To exit the telnet session, press **Ctrl+]** on the client computer keyboard.	

Selecting the Help tab

Selecting the Help tab displays basic help information about each of the other tabs, plus performance tips, as shown:


N9038A Agilent MXE - Windows Internet Explorer
http://a-n9038a-10102/index.asp
File Edit View Favorites Tools Help
N9038A Agilent MXE
Support | Manuals | Products | Agilent Site
Agilent Technologies
N9038A Agilent MXE EMI Receiver
Another web-enabled instrument from Agilent Technologies
Welcome Page
View & Modify Configuration
Web Control SA
Get Data
Get Image
SCPI Telnet
Help with this Page
Before using your Web-Enabled Signal Analyzer you may want to read through the following information.
Operating your Web-Enabled Signal Analyzer
Welcome Page
The Welcome Page provides information such as the hostname, model name, serial number, TCPI/IP port, SCPI telnet port, GPIB address of your instrument.
View & Modify Configuration
View / Modify configuration page allows you to modify some the instruments network settings on the instrument. The administrator password is required to modify these settings.
Web Control
This page contains an instrument graticule display, as well as the front panel buttons. Click on the front panel buttons to operate the Signal Analyzer. The interface is exactly the same as front panel operation of the instrument. This feature requires the instrument software to be currently executing.
Get Data
This page provides links to capturing trace data from the Signal Analyzer in CSV format. Note: This data is captured only if the currently executing measurement has trace information. This feature requires the instrument software to be currently executing.
Get Image
This page displays a snapshot of the instrument display. This feature requires the instrument software to be currently executing.
SCPI Telnet
Starts a SCPI telnet session to the instrument. This feature requires the instrument software to be currently executing.
Performance Issues
The performance of your Web-Enabled Signal Analyzer is mainly dependent on the speed of the network you are using to access it. This Web-Enabled Signal Analyzer will perform better on a high speed LAN connection than it will over a modem.
© Agilent Technologies, Inc. 2006
Done
Local intranet
100%

Capturing/Printing Displays and Windows

You need an external keyboard and mouse to use this feature.

Save the desktop:

Step	Notes
1. Press **Print Screen** on the external keyboard	This captures the desktop and saves it on the Windows clipboard.
2. Open a graphics software program like Microsoft Paint	
3. Paste the clipboard contents into the program	The keyboard shortcut **Ctrl** + **v** will paste the contents of the clipboard.
4. Save the image in a file	

Save the current active window:

Step	Notes
1. Click on the window you want to capture	This activates the window.
2. Press **Alt** + **Print Screen** on the external keyboard	This captures the window and saves it on the Windows clipboard.
3. Open a graphics software program like Microsoft Paint	
4. Paste the clipboard contents into the program.	The keyboard shortcut **Ctrl** + **v** will paste the contents of the clipboard.
5. Save the image in a file.	

Windows Shortcuts and Miscellaneous Tasks

This section provides a list of windows shortcuts (key combinations) that are useful when you operate the instrument without an attached mouse and keyboard. (See also "Navigating Windows Without a Mouse" on page 66.) Although these shortcuts are available in any Windows XP system, they are not commonly used when a mouse and keyboard are attached.

Windows shortcuts (key combinations)

You can use the following combinations of front panel keys to perform basic windows tasks when using the instrument without an attached mouse and keyboard.

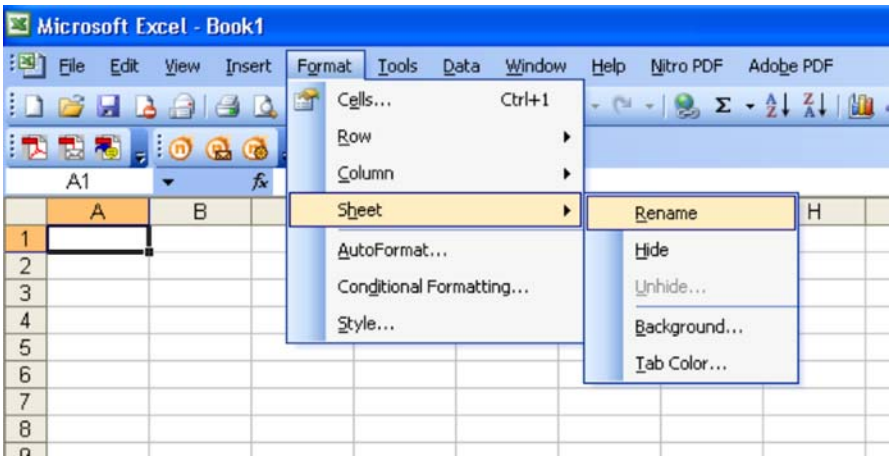
Windows shortcut key combinations

To do the following:	Press:
Display the Windows Start Menu	**Ctrl**+**Esc**
Cycle through all open applications	**Alt**+**Tab**
Select the first menu of a menu bar	**Alt**
Move through menu headings	**Left Arrow**, **Right Arrow**
Open (drop down) a menu	**Down Arrow**
Move through items in an expanded menu	**Up Arrow**, **Down Arrow**
Close the current menu selection	**Esc**
Cancel the current menu bar selection	**Alt**
Open an application's control menu (usually the left-most menu on the menu bar, starting with `File`)	**Alt**+**Select**
In a dialog: move between tabs	**Ctrl**+**Tab**
In a dialog: move forward through dialog box items	**Tab**
In a dialog: move backward through dialog box items	**Shift**+**Tab**
In a dialog: open a list box	**Alt**+**Down Arrow**
In a dialog list box or check box: select or deselect items	**Select**
In a dialog list box or check box: select or deselect one item at a time	**Shift**+**Up Arrow**, **Shift**+**Down Arrow**
In `My Computer`, expand a selected folder	**Enter**
In `My Computer`, open a folder one level up from the current folder	**Bk Sp**

Navigating an application menu without a mouse or keyboard

This example uses Microsoft Excel, but you can use a similar sequence of operations to select and execute any menu item of any application.

To select and execute the item **Sheet > Rename** option from the **Format** menu in the menu bar shown below,



perform the following operations:

Step	Notes
1. Press **Alt** to select the **File** menu in the menu bar.	The focus must be in the appropriate window.
2. Use the **Right Arrow** and **Left Arrow** keys to move horizontally to the Format menu.	
3. Press the **Down Arrow** to expand the Format menu.	
4. Use the **Down Arrow** and **Up Arrow** keys to move vertically to the Sheet menu item.	
5. Press the **Right Arrow** key to expand the Sheet sub-menu.	The Rename sub-menu item appears already selected. If another item in the same sub-menu is required, use the **Down Arrow** and **Up Arrow** keys to move vertically to that item.
6. Press Enter to execute the selected action.	

Windows taskbar auto-hide feature

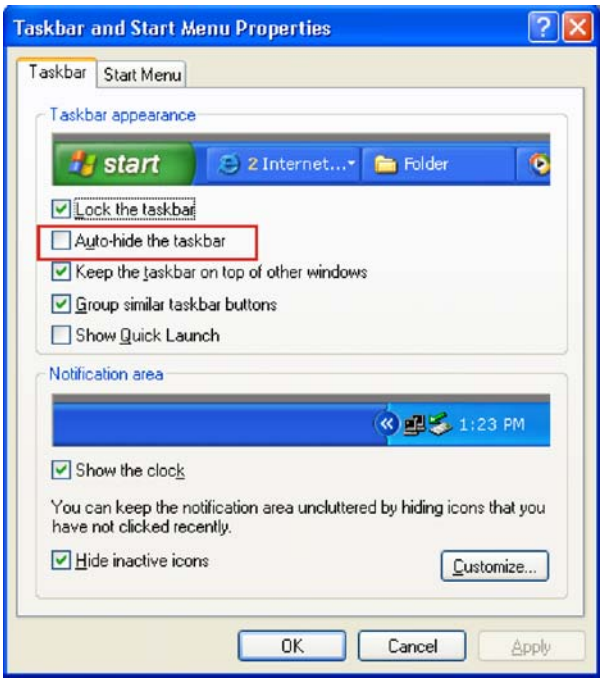
The Windows taskbar should always be in the auto-hide mode when using the instrument application. If the taskbar is not set to auto-hide, the lower part of the instrument display is obscured by the taskbar.

If a mouse is attached to the instrument, and you move the mouse cursor to the bottom of the display (either deliberately or accidentally), the taskbar automatically appears. Provided that the taskbar is in auto-hide mode, you can make it disappear again by moving the mouse cursor away from the bottom of the screen.

If at any time the Windows taskbar is inadvertently set to the non-auto-hide mode, you can restore the auto-hide behavior by doing the following:

Restoring taskbar auto-hide mode

Step	Notes
1. Click **Start** > **Control Panel**	If not using a mouse, press **Ctrl**+**Esc.**
2. In Classic View, click **Taskbar and Start Menu**, or, in Category View, click **Appearance and Themes**, T**askbar and Start Menu**	If you are not using a mouse, use the shortcut key combinations specified in the Section "Windows shortcuts (key combinations)" on page 97 to make these selections.
3. Click the **Taskbar** tab	The Taskbar and Start Menu Properties dialog appears.



Restoring taskbar auto-hide mode

Step	Notes
4. Select the **Auto-hide the taskbar** check box	If you are not using a mouse, press **Tab** repeatedly until the auto-hide option is selected, then press **Select** to toggle the check box state.
5. Click **OK**.	This applies the change and closes the dialog box.

Windows startup folder

All Windows XP systems include a special folder, called the Startup folder. If a program, or a shortcut to a program, is placed in the Startup folder (either by Windows itself, or by a third-party application, or by any user), that program automatically runs every time Windows is restarted.

When your instrument is first configured by Agilent, shortcuts to the appropriate application software and supporting programs are placed in the Startup folder. The exact contents of the Startup folder depends on the options you purchased with your instrument.

IMPORTANT You should **never** delete items that appear in the Startup folder, or move any item from the Startup folder to another folder. Deleting or moving any item in the Startup folder may cause applications not to start automatically when Windows is restarted, or may cause certain options to be unavailable when using the instrument.

If you wish to view the contents of the Startup folder, do one of the following:

- Either click **Start**, **All Programs**, then select **Startup**,
  or,
- Click **Start**, **My Computer**, then navigate to the folder:
  C:\Documents and Settings\All Users\Start Menu\Programs\Startup.

Additional startup items may also appear in the corresponding startup folder for the user that is currently logged on. For example, the startup folder for the **administrator** user is **C:\Documents and Settings\administrator\Start Menu\Programs\Startup**.

6 Troubleshooting

"Check the Basics" on page 102

"Problems with Microsoft Windows XP" on page 104

"Returning an EMI Receiver for Service" on page 105

WARNING **No operator serviceable parts inside. Refer servicing to qualified personnel. To prevent electrical shock do not remove covers.**

Check the Basics

- Is there power at the receptacle?
- Is the instrument turned on? Check to see if the green LED beside the power switch is on. Also, listen for internal fan noise to determine if the instrument cooling fans are running.
- If other equipment, cables, and connectors are being used with your EMI Receiver, make sure they are connected properly and operating correctly.

  If the instrument cannot completely load or run the operating system, or the instrument application is not successfully launched, the problem could be a corrupt hard drive. If the instrument gets far enough along in the boot process to run the "Agilent Recovery System", perform the Disk Drive Recovery Process as described on page 68.
- Is the Measurement Application running? If not, there is a software launch shortcut/icon on the desktop.
- Does the instrument application have the focus? (That is, is the blue window banner highlighted?) If not, move focus to the application with Alt-Tab.
- Review the measurement procedures being performed when the problem first appeared. Are all of the settings correct?
- If the instrument is not functioning as expected, return the instrument to a known state by pressing **Mode Preset**.

NOTE Some instrument settings are not affected by a Preset. If you wish to reset the instrument settings, press **System**, **Power On**, **Restore Power On Defaults**.

- Is the measurement being performed, and the results that are expected, within the specifications and capabilities of the instrument? Refer to the specifications guide for your instrument. Technical manual pdf files are available on the Agilent website:

  http://www.agilent.com/find/mxe_manuals
- If the instrument is not communicating via the LAN connection, check for the presence of blinking yellow LEDs on the rear panel LAN connector. If the ACT LED is not blinking, check the LAN cable and LAN integrity.
- To meet specifications, the instrument must be aligned. Either the Auto Align (On) feature must be selected (press **System**, **Alignments**, **Auto Align**, **Normal**), or the instrument must be manually aligned.
- Perform an Alignment. Press **System**, **Alignments**, **Align Now**, **All**.
- Perform an RF Preselector Alignment. Press **System**, **Alignments**, **More 1 of 2**, **RF Preselector**, **Align Now**, **20 Hz to 3.6 MHz**.

- If the previously performed alignments did not resolve the problem, press **System**, **Alignments**, **Restore Align Defaults**. Then press **System**, **Alignments**, **Align Now**, **All**.
- If the instrument exhibits large amplitude errors (> 10 dB) especially at frequencies above 10 GHz, the microwave preselector might not be properly centered. Press **Peak Search**, **AMPTD Y-Scale**, **Presel Center**. If the signal amplitude error is corrected, the preselector characterization should be performed. Press **System**, **Alignments**, **More 1 of 2**, **Advanced**, **Characterize Preselector**. The characterization will take several minutes and the instrument must not be interrupted during this time. If the instrument is interrupted during the characterization process, the characterization data will be destroyed and it will be necessary to perform the entire process again.
- Is the instrument displaying an error message? If so, refer to the Instrument Messages Guide.
- Check if the external frequency reference is selected but not available. Verify that it is selected by pressing **Input/Output**, **Freq Ref In**. If **External** is selected, changing the setting to **Sense** allows the instrument to sense the presence of an external reference and use it only if it is available. The frequency of the reference should be set correctly.
- If you are using a Windows program, other than the instrument application, you may notice it running slow. Place the instrument application in single sweep/measurement.

TIP You can get automatic electronic notification of new firmware releases and other product updates/information by subscribing to the *Agilent Technologies Test & Measurement E-Mail Notification Service* for your EMI Receiver at http://agilent.com/find/notifyme

Problems with Microsoft Windows XP

The Microsoft Windows XP operating system settings have been optimized for the best performance. Modification of these settings may degrade instrument performance and measurement speed. Those that can be safely modified are described in “Settings that can be changed” on page 47.

The X-Series EMI Receivers operate in an open Windows environment, so you can install software on the instrument. However, installation of non-approved software may affect instrument performance. Agilent does not warrant the performance with non-approved software installed.

Returning an EMI Receiver for Service

Calling Agilent Technologies

Agilent Technologies has offices around the world to provide you with complete support for your instrument. To obtain servicing information or to order replacement parts, contact the nearest Agilent Technologies office listed below. In any correspondence or telephone conversations, refer to your instrument by its product number, full serial number, and software revision.

Press **System**, **Show, System**, and the product number, serial number, and software revision information will be displayed on your instrument screen. A serial number label is also attached to the rear panel of the instrument.

Locations for Agilent Technologies

Online assistance: http://www.agilent.com/find/assist

Americas

Canada (877) 894 4414	Brazil (11) 4197 3600	Mexico 01800 5064 800
United States (800) 829 4444		

Asia Pacific

Australia 1 800 629 485	China 800 810 0189	Hong Kong 800 938 693
India 1 800 112 929	Japan 0 120 (421) 345	Korea 080 769 0800
Malaysia 1 800 888 848	Singapore 1 800 375 8100	Taiwan 0800 047 866

Other AP Countries: (65) 375 8100

Europe & Middle East

Belgium 32 (0) 2 404 93 40	Denmark 45 70 13 15 15	Finland 358 (0) 10 855 2100
France 0825 010 700* *0.125 Euros/minute	Germany 49 (0) 7031 464 6333	Ireland 1890 924 204
Israel 972-3-9288-504/544	Italy 39 02 92 60 8484	Netherlands 31 (0) 20 547 2111
Spain 34 (91) 631 3300	Sweden 0200-88 22 55	United Kingdom 44 (0) 118 927 6201

Other unlisted countries: http://www.agilent.com/find/contactus

Read the Warranty

The warranty for your instrument is in the front of your Specifications Guide. Please read it and become familiar with its terms.

If your instrument is covered by a separate maintenance agreement, please be familiar with its terms.

Service Options

Agilent Technologies offers several optional maintenance plans to service your instrument after the warranty has expired. Call your Agilent Technologies office for full details.

If you want to service the instrument yourself after the warranty expires, you can purchase the service documentation that provides all necessary test and maintenance information.

You can order the service documentation, **Option 0BW** (assembly level troubleshooting information) through your Agilent Technologies office.

Packaging the Instrument

Use original packaging or comparable. It is best to pack the unit in the original factory packaging materials if they are available.

CAUTION Instrument damage can result from using packaging materials other than those specified. Never use styrene pellets in any shape as packaging materials. They do not adequately cushion the equipment or prevent it from shifting in the carton. They cause equipment damage by generating static electricity and by lodging in the instrument louvers, blocking airflow.

You can repackage the instrument with commercially available materials, as follows:

Step	Notes
1. Wrap the instrument in antistatic plastic to reduce the possibility of damage caused by electrostatic discharge	
2. Use a strong shipping container.	The carton must be both large enough and strong enough to accommodate the instrument. A double-walled, corrugated cardboard carton with 159 kg (350 lb) bursting strength is adequate. Allow at least 3 to 4 inches on all sides of the instrument for packing material.

Step	Notes
3. Surround the equipment with three to four inches of packing material and prevent the equipment from moving in the carton.	If packing foam is not available, the best alternative is plastic bubble-pak. This material looks like a plastic sheet filled with 1-1/4 inch air bubbles. Use the pink-colored bubble which reduces static electricity. Wrapping the equipment several times in this material should both protect the equipment and prevent it from moving in the carton.
4. Seal the shipping container securely with strong nylon adhesive tape.	
5. Mark the shipping container "**FRAGILE, HANDLE WITH CARE**" to assure careful handling.	
6. Retain copies of all shipping papers.	

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